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#### IN OUR TWENTY-FIFTH YEAR.

IT seems to be a characteristic of the human mind to celebrate the progress of events at even periods of five years. The college graduate returns to the bosom of his Alma Mater on the fifth- tenth- twenty-fifth anniversary of his being turned loose upon the world; and similarly the domestic milestones that are believed to warrant particular festivities and an appeal to friends for unneeded articles of tin, wood, glass, etc., are located at even five-year intervals. Analogously, the INDIA RUBBER WORLD feels warranted in mentioning the fact that with this issue it enters upon its twenty-fifth year, for with the September number it finished twenty-four complete years not only of continuous publication but, what is more notable, of publication under the same ownership and editorship.

What tremendous developments have taken place in the trade during these twenty-four years! To be sure, the American rubber industry was by no means in its infancy in 1889, for it had been in existence for practically fifty years, and had made great progress and was consuming, all told, of rubber, gutta percha, scrap rubber, balata, etc., nearly 32,000,000 pounds and producing

manufactured products to the value of \$42,000,000 yearly. But during the last twenty-four years its growth has been five times as great as during the first half century; for last year—that is, for the twelve months ending with June—it consumed over 113,000,000 pounds of crude rubber and, including kindred products—gutta jelutong, scrap rubber, etc.—over 224,000,000 pounds; while the value of its manufactured product was probably in excess of \$225,000,000. Tires alone for that twelve months amounted to over \$100,000,000 in value, or two and a half times the entire rubber product of twenty-four years ago.

And the INDIA RUBBER WORLD has sought—and we think successfully—to be the mouthpiece of this great industry and to keep pace in its growth, approximately at least, with the growth of the American rubber trade. The first number of this paper, published in October, 1889, contained 21 pages of reading matter and 23 pages of advertising. During its first year it published 300 pages of text (an average of 25 pages per issue) and 366 pages of advertising. During the year just closed it published 656 pages of text (an average of nearly 55 pages) and 932 of advertising. If the trade and the paper both increase in the same ratio during the next twenty-four years the American manufacturers in 1937 will be using 1,568,000,000 pounds of rubber and kindred materials and will be making rubber goods of the value of \$1,125,000,000; and the INDIA RUBBER WORLD will have about 1,440 pages of reading matter for the year, or 120 pages per issue, and will carry during the twelve months about 3,000 pages of advertising. Here's hoping that this delightful condition may come about, with both the trade and the paper still under the same personnel as now.

#### THE GREAT ECONOMY OF THE LARGER TIRES.

THERE has been a growing belief among owners of motor cars, and particularly among users of motor trucks, that while the smaller tire could be procured at a less initial expense, economy really lay in the direction of the wider tire. The truth of this theory has never been brought out more impressively than in an article which appears in this issue, entitled "Gaining better mileage from the motor truck," which, together with the table of figures appended to it, gives the results of investigations covering the last two years carried on under the direction of the Automobile Chamber of Commerce. These investigations prove conclusively the great economy of the wider tire. The table gives a comparison of the mileage

secured in fifteen different instances with 4-inch tires and with 5-inch tires used on the same vehicle. It will be noted that in some instances the substitution of a 5-inch tire for a 4-inch tire increased the mileage secured over 300 per cent. The table shows an average increase in the cases under observation, where a 5-inch tire was substituted for one an inch narrower, of 58 per cent. for the front wheels and 123 per cent. for the rear wheels.

While this table shows simply the great economy from the standpoint of tire expense of the wider equipment, there must be added to this advantage the tremendous saving to the machinery of the motor when the wheels are equipped with tires in good condition rather than tires in various stages of dissolution.

#### REASONS FOR THE DROP IN RUBBER PRICES.

THE fluctuations in the price of crude rubber are always interesting, and to people who are buying and selling this commodity they are always important; but the phase of the matter which is of real significance is not so much the fact of the rise or fall in prices as the reason for it. If the reason for a noticeable drop proves to be one of a permanent character, it is obviously a matter of considerable concern to gatherers and producers of crude rubber. If it proves to be simply of a temporary nature, they need then feel no very great alarm.

Rubber prices have given rather an interesting exhibition during the present year. Reviewing briefly the course of Upriver Fine, we find that in January it ranged from \$1.02 to \$1.09; in February from 96 cents to \$1.03; in March from 88 to 96 cents, and in April from 78 to 89 cents. In other words, there was a distinct downward trend constantly in evidence, the lowest price of one month being practically the highest price of the next. The drop in average prices from January to April was about 22 cents a pound. Now the question is:—What was the cause, or what were the causes, for this uniform decrease in the price of crude rubber? There are probably several answers to this question. In the first place, there was the natural apprehension of the rubber manufacturer over the tariff situation. This would tend to make him extremely conservative in his purchases. And in the second place might be cited the increased cost of living, which made it necessary for the great body of consumers to give more careful consideration to their expenditures. It needs no proof to show that when beef costs 30 cents a pound a great many people are likely to buy fewer tires than when beef costs 20 cents a pound. When the necessities of life are ranging along the upper altitudes a very considerable

proportion of the community has to cut off many luxuries, and incidentally, a great many health-preserving articles that should be classed as necessities but which are generally counted among the luxuries—rubber shoes and rubber coats, for instance.

But there was another cause for this drop in rubber prices which has escaped general attention but which probably had as much influence as all other causes put together, and that was the great decrease in the consumption of rubber by the Akron mills during a period of six or eight weeks, beginning early in February and extending into April. It will be recalled that the Akron strike started about the 10th of February. It affected the mills in varying degrees, some of them being entirely closed and others working on greatly reduced tickets. Immediately following the termination of the strike there were disastrous floods in Ohio, which further affected the operation of some of the Akron mills.

Speaking in round numbers, Akron uses one-half of the crude rubber consumed in the United States, her share being about 25,000 tons a year. February and March would normally be busy months, particularly in the production of tires, and had it not been for the strike and the floods, it is safe to say that the factories of Akron would have consumed close to 6,000 tons of rubber from the middle of February to the middle of April. But during that time the Akron rubber industry was not operating at more than 50 per cent. of its normal capacity. In other words, about 3,000 tons of rubber which under normal conditions would have been consumed during that period remained on the market. This amounts to 6 per cent. of the annual consumption of the country and would be fully 25 per cent. of the rubber that would naturally be converted into goods during that period. This great decrease in demand for rubber would certainly account for the 20 per cent. lower prices in the early part of April as compared with those of four months before.

This contention that the Akron strike and flood had a marked influence on rubber prices is borne out by subsequent events, for immediately after the Akron factories got fully under way rubber prices began to mount. In May the range was from 81 to 92 cents; in June from 87 to 92 cents, and in August as high as 94 cents was paid for Upriver Fine. That is, about one-half of the loss during the four months from January to April inclusive was made up during the four months from May to August.

The causes for the low rubber prices of last spring appear, therefore, to be exceptional and temporary; and while, with the greater production of plantation rubber,

prices are bound to tend downward as the years go by, there appears to be nothing in the present situation or in the immediate future to indicate any continuous low level of prices.

#### THE BUSINESS OF STEALING RUBBER.

EVERY now and then the rubber trade wakes up to the fact that rubber stealing is still going on. It is not that more rubber is stolen, but some one of the stealers blunders and thus centers attention upon this profitable and secret phase of the rubber industry. Even then it is looked upon only as an incident.

As a matter of fact, however, the stealing of crude rubber has long since ceased to be incidental. It is a business—and a very serious business, too, for many manufacturers. It would seem, on the face of it, as if this were a practice that might readily be stopped, for crude rubber is not a commodity in general use. Its natural movement is through well defined channels, and when it is offered outside of them suspicion is at once created. The only people who under normal conditions would have crude rubber to offer are importers, brokers, and, in some cases, manufacturers who have a surplus stock. Anyone else, who tries to sell a few pounds or possibly a few hundred pounds of crude rubber, becomes, by the very nature of the circumstances, a suspicious person. Anyone who purchases such small offerings from unknown people must be aware that he is probably buying stolen goods.

Naturally, rubber that is secured at no expense—other than the infraction of such trifles as the moral and statute laws—is sold at a considerable concession in price. To whom is it sold? Find that out and the stealing of rubber can be stopped. Where there are thousands of workmen—not all of them scrupulously honest—the temptation to take a few pounds of unguarded rubber is bound sometimes to be too strong to resist; and it is impossible to keep close watch of this great army of employees. But the number of avenues through which this stolen rubber can be disposed of is comparatively small and more readily discovered. A list of workmen or rag-pickers or freight handlers who occasionally get away with a pound of rubber would be of no avail in stopping rubber stealing. But a list of the big firms which buy the aggregation of these pounds would show any stealings committee where to begin work.

#### WILL THE EASTERN PLANTERS TRY A CORNER.

THERE are rumors, coming by way of the European press and through other channels, that the Middle East planters, being very much dissatisfied with the prices which have recently ruled for plantation rubber, have decided to take concerted action "to restore plantation prices to their normal level."

This gives rise to two questions: What is the "normal" price for plantation rubber? and, if purchasers will not give it how are the planters going to get it?

Speaking of rubber in general, it would be rather difficult to discover just what its normal price is. Many years ago the normal price for crude rubber was 25 cents, and for some years it remained under 50 cents. Two years ago it was between \$2 and \$3. At present the normal price may be located at about 90 cents for Pará, with plantation crepe about 15 per cent. lower.

In other commodities—at least those whose production and consumption have been on an established basis for many years, and where an increase in consumption is followed by a natural proportionate increase in production—it may very properly be said that there is a normal price; but the conditions in the rubber trade have been extremely unsettled for a number of years, the advent about ten years ago of the automobile, with its tire, increasing the consumption with extreme rapidity, while the maturing of plantation trees has now begun to increase the production out of all proportion to the natural increase in demand. So what the normal price of rubber will be five years or even three years from now is wholly a matter of conjecture.

But the planter's chief complaint is that his rubber is selling so far below Pará; and he proposes to correct this disparity. But how is he going to do it? Rubber manufacturers do not prefer Pará out of mere prejudice. Their only prejudice is to get the most they can for their money. And the planter's problem is simply to persuade the manufacturer that he can get as much out of plantation rubber as out of the product of the Amazon. Then he can get an equal price. The planters disclaim all intention of trying to effect a "corner," but they say that they hope so to systematize the selling channels through which their rubber passes that prices will be materially advanced. It may be quite possible, of course, for them to improve their methods of salesmanship, but they can do this not by putting artificial restrictions on the sale of their

product, but rather by improving and standardizing its quality, and by such intelligent exploitation as will convince the purchaser that it really possesses the quality the planters claim for it.

One suggestion has been made, however, for temporarily limiting the production of plantation rubber which bears a very sensible aspect, and that is a suggestion that the planters refrain from tapping for a brief season—say for two weeks. This would temporarily reduce the market supply and thus probably increase the selling price. And in addition to that, it would undoubtedly be beneficial to the vast majority of plantation trees, most of which are tapped at an immature age. A respite of a few weeks from tapping would without question improve most of the trees and also the quality of rubber subsequently made from their latex. At any rate, here is a suggestion, the execution of which would tend to yield the planter a little better price for the time being, and would give him better rubber in the future.

But, viewing the plantation situation as a whole, the president of the Kepitigalla Rubber Estates expressed the right idea in his recent annual address to the stockholders when he said that the company was basing all its operations on the assumption that they were not going to get a very much higher price than that ruling at the present time. In fact, wise companies will base their operations on the assumption that they are going to get gradually lower prices. Plantation enterprises which have been well conceived and properly managed can afford to do this; and in the case of plantations which are laboring under any obvious disadvantages, either of excessive capitalization or of unfavorable physical conditions, it will in time probably be the ancient sad refrain of "the devil take the hindmost."

#### HEVEA PLANTING SUCCESSFUL IN MEXICO.

**A**N extremely interesting letter from Mr. J. C. Harvey, of Vera Cruz, Mexico, appears on another page of this issue, in which he recites his experiences in planting *Hevea* in that country. He describes the results obtained from a number of seeds secured from the botanical gardens in Singapore, the trees from which were six years old last spring. As they had then attained a circumference of between 19 and 26 inches, they were tapped, and with most satisfactory results. Samples of the rubber obtained have been sent to New York and pronounced equal to the best plantation product of the East.

Mr. Harvey says that the poorly developed heads, yellow foliage, atrophied branches and dead tops, not infrequently seen in the *Castilloa*, were entirely absent in the case of these *Hevea* trees; moreover, he pronounces the *Hevea* much less exacting in its soil requirements than the *Castilloa*. His opinion—based upon his years of personal observation—is that there are large areas in Mexico and also in Central America where, if territory is selected with proper care with reference to temperature and rainfall, the *Hevea* can be profitably cultivated.

As the question of *Hevea* planting in Mexico is one that has received a great deal of attention during the last decade, a widespread interest will be felt in the results of Mr. Harvey's experiments as given in this letter, and his optimistic conclusions will be most encouraging to other Mexican planters, who have long felt that *Hevea* culture in that country, under right conditions, had great possibilities.

#### NEW WORK FOR MOTORCYCLE TIRES.

**P**RODUCERS and manufacturers of rubber who are very anxious to see new avenues opened up by which its consumption can be materially increased will be pleased to hear of the enterprise of certain riders of motorcycles, who, if they have not found a new use for rubber, have at least discovered a way in which the rubber in motorcycle tires can be consumed with considerably greater rapidity. Every well-balanced man will remember the exhilaration he felt in the coasting days of his boyhood in the country, when the sled arrived at one of those raised places in the road technically known as "thank-you-ma'ams," which shot the sled with its passengers up into the air to come down again some distance farther down the hill—whether right side up or wrong side up no one particularly cared. Now the motorcyclists have found that they have the same agreeable sensation when coasting down hill on their machines and coming to these selfsame water-breaks; and "jumping-the-jumps" is reported as a motorcycle sport of growing popularity. If they are going rapidly enough the machine, with the rider, is projected into space to some considerable distance, 20 or 30 feet, as the case may be; and it is fairly obvious that when they reach the earth again the impact is a great strain upon the tire, and that many a tire which under normal usage might have gone on for another thousand miles is likely to come to grief, and thus release another new motorcycle tire from the dealer's stock.

Just how this new sport will affect the mortality rate among the riders it is yet too early to tabulate, but the effect on the tires is not open to question and is altogether to the satisfaction of the manufacturer.

## Gaining Better Mileage From the Motor Truck.

During the past two years tire manufacturers and the trade papers have had much to say in regard to the comparatively poor mileage obtained from truck tires. It is the opinion of tire specialists that truck makers have been equipping with too light tires for the loads they are called upon to carry. Heretofore this has been more or less a matter of conjecture; but the concrete examples given below prove the wisdom and economy of adequate tire equipment.

It has been conclusively demonstrated that, next to the driver's wages, the largest single item in the cost of operation of a motor truck is the cost of tire replacements. This is even found to be the case in most electric commercial vehicles where the cost of keeping the batteries charged was for a long time considered to stand next to the driver's wages as an item of expense. For the past two years the subject of solid tire wear and destruction has been closely studied by the National Association of Automobile Manufacturers and its successor, the Automobile Chamber of Commerce, as well as by tire manufacturers and the heads of establishments which are large users of motor trucks, with the object of ascertaining the factors which have a direct bearing upon or control the mileage obtained from the various types and sizes of solid tires. As a result of these investigations tire manufacturers, as well as motor truck engineers, have come to the conclusion that by the adoption of proper methods of operation and the use of proper sized tires, the users of motor trucks can greatly increase their tire mileages and thereby cut the cost of operation and maintenance very materially.

The study of this question has included an investigation of the effects of paving conditions and topography in different cities of the United States from the Atlantic to the Pacific; the greater mileages obtained from solid tires of the same size and under the same loads in European countries; the effects of overloading and excessive speed; improper distribution of loads; diameter and shape of tires; inadequate tire equipment for load capacity, and several other factors bearing upon the subject. The most important of these, which relate to the wearing qualities of tires is, without doubt, the proper size of tires for the load which they are to carry.

It is quite evident that anything that will tend to materially increase the tire mileage will at the same time reduce the operating expense more than any other factor. Manufacturers offer guarantees on their tires of from 6,000 to 10,000 miles, giving an average guarantee of 8,000 miles. As a matter of fact, motor truck operators have not been getting this mileage out of their tires for the simple reason that they have been replacing worn out equipment with others of inadequate size. The average solid tire mileage in twelve principal American cities, derived from more than 150 reports on the tire equipment of various sizes of trucks, both gasoline and electric, as reported by the National Association of Automobile Manufacturers several months ago, is a little over 7,000 miles. In six of these cities the average was from 1,500 to 4,400 miles less than the average guarantee of 8,000 miles.

While it is conceded that the nature and condition of the street paving have much to do with the excessive tire destruction and wear, it has been proven by actual demonstrations, extending over periods of from a few months to two years, that overloading and inadequate tire sizes are even greater factors, as will be seen upon analyzing the appended table. These figures have been compiled by one of the prominent tire manufacturers, and they set forth the mileages obtained with different sized tires, the trucks in each case operating under precisely the same conditions as to load, pavement, driver, etc.

Altho the average mileage obtained from solid tires is 8,000, many cases are reported where this figure has reached 15,000; and where the truck owners take particular pains to

analyze the conditions under which their vehicles operate, and take steps to correct any abuses by the drivers, mileages as high as 30,000 have been obtained. For instance, The London Omnibus Co. reports that in many cases the tires on its vehicles show 30,000 miles of service. In these cases, however, the vehicles are probably those which operate in the heart of London where the pavement is of the best asphalt or wooden block. It should also be stated that particular attention is paid to the efficient operation of these vehicles; and the fact that they are adequately equipped with tires of proper sizes is probably the factor which plays the most important part in their long service.

A few specific instances will be cited to show the effect of increasing the tire sizes where the original sets have shown poor efficiency. In all cases it will be seen that where larger tires have been substituted the percentage of increase in the resulting mileage far exceeds the percentage of increase in the size of the tires as well as the increase in cost. This fact alone argues strongly in favor of using as large tires as the operating conditions will warrant.

One striking example of the results received from tires not large enough for the load, as reported by a prominent tire manufacturer, is furnished by two 1½-ton trucks operated by The Texas Co., one in Fort Worth and the other in Dallas. The rear wheels of these trucks were equipped with 3-inch dual tires, all of which failed in a little over 3,000 miles. When the manufacturer began studying the situation and had the trucks weighed, it was found that each wheel had been overloaded by 858 pounds. The old 3-inch tires were consequently replaced with 4-inch tires, which have given more than 10,000 miles and are still running. They have worn down evenly and smoothly and afford one of the best examples that could be desired to show the economy of using tires large enough to carry the load. Furthermore, these trucks always carry the same load, being built to accommodate a certain number of oil containers.

Another example is furnished by a three-ton truck operated by the National Refining Co. of Indianapolis. This truck was originally equipped with 36 x 5-inch single front tires and 36 x 4-inch dual rears. While using this equipment the company was changing the tires every two or three months until persuaded by the manufacturer to adopt larger sizes for the rear. This advice was accepted, as a result of which the new tires have been in service for more than a year without a single change.

An ice company was operating a three-ton truck equipped with 36 x 5 single fronts and 36 x 4 dual rears, and during the busy months of last summer this truck traveled about 200 miles a day, being compelled to change tires every two or three months. The rear tires were finally changed to 36 x 5 duals during March of the present year, since which time the truck has been running 24 hours a day, delivering 84 tons of ice. During the six months of use the tires show only slight tread wear and are still good for several months. The manager of this company reports that he is pleased with the service received from the larger tires and that their installation stopped the delays which were frequent last year.

The Jackson Brewing Co. of New Orleans operates, among other vehicles, a three-ton truck which was originally equipped with 4-inch tires front and 4-inch duals rear. Before one half

of the manufacturer's guaranteed mileage was realized the tires were worn out. They were then replaced with 5-inch tires both front and rear and these were in service considerably more than a year, giving the guaranteed mileage.

In one case where it was necessary to supply a new wheel to a 1½-ton truck which was equipped with 3½-inch tires, a wheel with a 3-inch tire was substituted and the mistake was not noticed by the purchaser until the new tire began to wear more rapidly than the others. At the end of about 4,000 miles the 3-inch tire had worn down to the steel base, while the others were still in good condition. This is probably one of the best examples of the results of inadequate tire equipment that could be supplied from actual experience.

In still another case where it was found advisable to enlarge the size of the tires, the increase in mileage, compared with the increase in the tire size, was about in the ratio of 3 to 1. The original 36 x 4 rear tires showed a mileage of 4,513. When

these were increased to 36 x 5, the mileage reached above 7,600, showing a 25 per cent. increase in size of tire with nearly 70 per cent. increase in the mileage.

The following table shows the results in a number of instances where a slight increase in the size of the tire equipment has shown a much greater increase in the mileage obtained. These figures were only recently completed by a well-known tire manufacturer, the observations extending over a period of from three or four months to about two years. In each case the rear tires were of the dual tread type. It will be noticed in this summary, as in all cases mentioned above, that a slight increase in the size of the tires means an enormous increase in the service. From the averages of these figures it will be seen that the increase in service compared with the enlargement in equipment, is in the ratio of almost 4 to 1. It is self-evident, therefore, that the additional service received more than offsets the increased cost of the larger equipment.

TRUCK OPERATOR.	TIRE EQUIPMENT.				MILEAGE.			
	Original.		Present.		Original.		Present.	
	Front.	Rear.	Front.	Rear.	Front.	Rear.	Front.	Rear.
Isley Held Co., New York City.....	34x4	36x4	34x5	36x5	5,500	3,800	8,000	8,000
A. Finkenberg, New York City.....	34x3½	34x3½	34x4	34x4	2,500	2,500	8,500	9,000
H. C. & A. I. Piercy, New York City.....	....	36x4	....	36x5	....	11 mos.	....	20 mos.
J. T. Castle Ice Cream Co., Irvington, N. Y.....	36x4	36x4	36x5	36x5	5,000	5,000	8,000	11,000
J. T. Castle Ice Cream Co., Irvington, N. Y.....	36x4	40x4	36x6	40x5	5,000	4,600	11,500	11,500
Newark Rivet Works, Newark, N. J.....	34x4	36x4	34x5	36x5	5,500	4,500	8,000	10,000
Patton Paint Co., Newark, N. J.....	34x4	36x4	34x5	36x5	5,500	4,500	8,000	10,000
C. Trefz, Brewery, Newark, N. J.....	34x4	36x4	34x5	36x5	6,000	5,000	8,000	9,000
J. W. Greene, Jersey City, N. J.....	36x5	40x4	36x5	42x5	8,000	4,000	8,000	9,500
Wilkinson, Goddes & Co., Newark, N. J.....	36x5	40x4	36x5	42x5	8,000	4,000	8,000	8,500
Wilkinson, Goddes & Co., Newark, N. J.....	34x4	36x4	34x5	36x5	5,500	5,000	11,000	11,000
Swift & Co., New Brunswick, N. J.....	34x4	36x4	34x5	36x5	5,000	4,000	8,800	9,000
H. Muhs Co., Paterson, N. J.....	....	40x4	....	42x5	....	4,000	....	9,000
Chelsea Storage Warehouses.....	34x4	36x4	34x5	36x5	4,000	4,500	8,000	8,000
Jere Skidmore & Sons, New York City.....	....	42x6	....	42x7	....	3,500	....	8,000
Average Percentage Increase in Tire Widths and Mileage.....	....	....	22	24	....	....	58	123

#### AMAZON RUBBER SHIPMENTS FOR 1912 AND 1913.

MR. PICKERELL, the United States consul at Pará has sent the state department some statistics compiled by one of the large exporting companies of Brazil which show that during the crop year 1912-13 there were shipped from the Amazon Valley 94,525,065 pounds of rubber, or some 4,500,000 pounds more than in the preceding season. Summarized, the exports for 1912-13 by ports of shipment and the total exports for each of the four preceding crop years were as follows:

Ports.	Fine. Pounds.	Medium. Pounds.	Coarse. Pounds.	Caucho. Pounds.	Total. Pounds.
From Pará to—					
United States...	9,310,415	1,787,730	10,072,695	4,603,095	25,773,935
Europe .....	15,037,190	1,587,173	3,034,775	5,883,870	25,543,010
From Manaus to—					
United States...	9,311,475	1,695,455	2,896,035	2,601,475	16,504,440
Europe .....	10,174,855	1,863,313	2,451,505	6,349,620	20,839,295
From Iquitos to—					
United States...	57,695	4,920	31,415	78,445	172,475
Europe .....	1,794,510	167,250	661,185	2,571,745	5,194,690
From Itacoatiara to—					
United States...	9,260	330	6,615	5,620	21,825
Europe .....	232,505	28,163	153,785	60,940	475,395
Total to—					
United States...	18,688,845	3,488,435	13,006,760	7,288,635	42,472,675
Europe .....	27,239,060	3,645,905	6,301,250	14,866,175	52,052,390
Grand total—					
1912-13 .....	45,927,905	7,134,340	19,308,010	22,154,810	94,525,065
1911-12 .....	45,931,105	7,839,635	19,808,530	16,378,140	89,957,410
1910-11 .....	37,873,210	6,318,450	15,095,050	14,640,895	73,927,605
1909-10 .....	43,783,800	7,720,585	19,006,050	15,668,250	86,178,685
1908-09 .....	40,428,365	6,750,555	19,336,740	17,797,915	84,313,575

The consul reports: "It is the opinion of merchants who

should know that, by reason of the low prices at present prevailing for rubber, many latex gatherers are leaving the woods, and that few new workers are being found to take their places. Unfortunately, there are no statistics available to support this statement; but it is not improbable that there is some truth in the rumor. What effect it will have on the coming crop it is impossible to say at this writing (July 24, 1913); but this labor shortage and the fact that it is becoming increasingly difficult to find capitalists willing to finance advances, forces one to the conclusion that the 1913-14 harvest will be smaller than the 1912-13 crop."

#### TROPICAL GOODYEAR AGENCY.

In addition to its Canadian and European representation, the Goodyear Tire & Rubber Co. is represented and its tires distributed by agents at each of the following centers: Cuba, Porto Rico, the Philippine and Hawaiian Islands, Brazil, Uruguay, Barbadoes, Trinidad, Jamaica, the Republic of Panama and at Ancon in the canal zone.

#### AUTO HORN BULB WITH RUBBER TOP.

An English company is manufacturing an automobile horn bulb which in reality is a metal funnel with a curved rubber cap fastened on tightly over the top. A tap against the cap blows the horn, and when the cap, by reason of much use, becomes worn out, it can be removed very easily and another put on in its place.

## Para Rubber in Mexico.

By J. C. Harvey.

In spite of civil war and revolutions, Mr. Harvey keeps his Mexican plantations going. He stands his ground, equally prepared to entertain friends, fight or pen scholarly essays. The following letter from him is of great interest, not alone to the student, but to the many who are interested in Mexican plantations. That the *Hevea* could be grown in southern Mexico as well as anywhere in the world, many have believed. Mr. Harvey's facts and figures prove that belief to be fully justified. The samples of rubber submitted were equal to the best plantation product of the Middle East.

HAVING in mind a request made by you long since for notes on the progress made by the trees of *Hevea Brasiliensis* (Para rubber) planted by the writer, the facts are as follows:

The first seeds—some 20 in number—were transmitted to me by Dr. Henry S. Ridley, late director of the Botanic Gardens at Singapore. Fourteen of these germinated and were planted in permanent position in due season. These trees you saw when visiting Mexico some nine years ago. I regret to say that they were destroyed subsequently by deer, during a protracted absence of the writer. Indeed at that time we did not know that deer were fond of feeding on the bark of *Hevea* trees.

About three years after the loss of the first trees a further remission of seeds was made, and their product—the present

referred to at greater length. The phenomenon of foliar periodicity, both terminal and lateral, is as well marked here in Mexico as in the Orient, occurring at various intervals throughout the year, complete defoliation rarely lasting more than a fortnight, often much less and in some instances new growth occurring synchronously with the fall of the older foliage. In this district—South Eastern Mexico—the partially deciduous period may be said to occur during April and May, the driest months of the year, the deciduous character being more marked as the trees attain age.

The aspect of poorly developed heads, yellowing of foliage—indicating a want of chlorophyll and caused no doubt by defective root nutrition—atrophy of lateral branches and die-back of tops, as seen in some localities here in Mexico and elsewhere as so commonly affecting *Castilloa*, is entirely



*Hevea* PLANTINGS AT EL PALMER ESTATES.

trees, now six years in position—forms in part the subject of these notes. These *Hevea* trees have grown vigorously and are in the best of health. The accompanying photographs will convey some idea of them, and of others herein

absent in *Hevea*, tho growing in the same localities. Briefly then, insofar as plantings, either upon a practical or experimental scale, have been made, the trees leave nothing to be desired in their general aspect of growth and health—

fullness, tho upon the whole it is doubtful if the growth is quite as rapid as in equatorial regions lacking a well marked dry season; and upon this point it may not be doubted that there are compensations, as during a fairly well marked dry



*Hevea* TREE IN GARDEN AT EL PALMER.

season many forms of mycelium and various bacterial germs are destroyed or reduced to a minimum, while bark formation is relatively solidified and wounds heal with less liability to rot, thus reducing the risk of insect or other attack upon the cortex.

Tapping was commenced upon the few trees of sufficient size—varying in circumferential measurement from 19 to 26 inches at 2½ feet above ground—the early part of April of this current year, and I am sending you samples of the rubber—I believe the first *Hevea* rubber produced in Mexico.

Single half spiral excisions embracing one-half of the circumference of the trees have been worked, daily parings from the lower wall of the excisions having been made, on the basis of thirty parings to the inch of bark removed. It must be admitted that this degree of expertness was not attained until some little practice was had. The now well-known phenomenon of wound response, commencing with an inappreciable quantity of thick latex for the first three or four parings and followed by thinner free running latex, was just as well marked and apparently as certain as elsewhere. The yield of dry rubber samples, made daily and taken from trees of dimensions already referred to, varied from eight to twelve grammes from the single half spiral. This plan is being changed to three oblique excisions on the half herring bone system, the cuts ten inches apart—the object of the writer being to try the various systems not altogether condemned by the most advanced authorities on the subject.

Up to now no vegetable disease has been observed as affecting *Hevea*. Leaf cutting ants will eat the foliage, but their nests are easily destroyed with one or two applications of bi-sulphide of carbon, this pest having been dealt with previously in plantings of cacao by the aid of the same remedy and with complete effectiveness.

We have, however, one animal pest that cannot be blinked at, and an initial capital charge should be considered as inevitable in any contemplated laying down of *Hevea* in Spanish America—at least as far south as the Isthmus of Panama, to which point the writer has observed its existence. I refer to the pocket gopher, or, as known here, the "Tusa" or "Taltusa," a rat-like rodent which burrows in the ground and eats with avidity the roots of *Hevea*, cacao and other plants, especially those containing starch, such as the banana. This pest, however, may be disposed of effectively by trapping, digging out, or poisoning; and the best time for its almost entire destruction is immediately after the felled first growth has been burned, while the surface is as clean as may be and all evidences of burrowings visible. Such mounds or burrowings should be marked with stakes and the pests exterminated, no pains being spared to accomplish this; after which, with a little care, any further inroads from adjacent wild land can be dealt with. This pest is well known in the orange groves of California and Florida and the pecan nut orchards of the southern United States. In some districts of tropical Mexico and south it is almost unknown; in other localities, more or less common. It is a good plan to have a clean strip some twenty feet in width constantly maintained so that any incursions from adjoining wild or infected lands can be at once detected, or before any damage be done, and thus the plantings may be kept free.

To what extent tropical Mexico or other district in nearby Central America may yet figure in the production of Pará rubber is difficult to say, but there can be no doubt in the opinion of the writer that considerable areas in these countries are but awaiting selection and the use of sufficient capital to transform them to profitable undertakings. Undoubtedly much care in the selection of land, available labor supply,



*Hevea* TREES AT BUENA VENTURA.

etc., will be necessary. It is evident, however, that the tree is far less capricious or exigent in its soil requirements than *Castilloa*, given the requisite temperatures and rainfall. And at this point it is opportune to give a condensed table of

meteorological records as made at El Palmar Estates during the past three years:

	Inches.	Ave. Mini. Temp.	Ave. Max. Temp.
January .....	4	60 deg. F.	81 deg. F.
February .....	3	60 deg. F.	82 deg. F.
March .....	4	65 deg. F.	87 deg. F.
April .....	3	70 deg. F.	92 deg. F.
May .....	5	75 deg. F.	95 deg. F.
June .....	15	72 deg. F.	92 deg. F.
July .....	22	70 deg. F.	90 deg. F.
August .....	20	75 deg. F.	92 deg. F.
September .....	22	72 deg. F.	88 deg. F.
October .....	18	68 deg. F.	85 deg. F.
November .....	5	65 deg. F.	83 deg. F.
December .....	3	62 deg. F.	80 deg. F.

Rainfall.....124 inches.

Both higher and lower temperatures have been recorded during the period under consideration—but the extremes were but a degree or so—nor are the annual variations of rainfall very great, not exceeding fifteen inches.

At Buena Ventura the rainfall over a period of 14 years shows an average of some twenty inches less, the variation annually ranging from 90 to 115 inches, tho the average atmospheric humidity throughout the year is greater, with a lesser rainfall, owing to less marked dry periods and a higher average of cloudy days, caused by proximity to oceanic effects. This data may be said to fairly characterize the best of the rain forest districts of Spanish America north of the Isthmus of Panama fronting the Atlantic or Caribbean sea.

Our few trees at Buena Ventura are growing in a dark



HEVEA TREE AT BUENA VENTURA.

loam soil underlaid with a light yellow somewhat porous clay. At San Selerrio, in very dark clay loam underlaid at varying depths with a very light colored stratified clay, and in some instances with a rotten shale-like formation into which many tree roots penetrate and upon which several *Hevea* trees

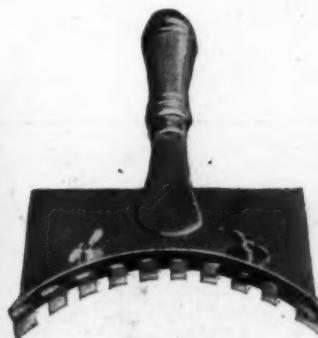
some seven or eight years of age are in a most flourishing condition and are being tapped with most gratifying results, several thousand one year plants are also in a healthy state.

At El Palmar the soil is the regular Cordoba coffee soil, a chocolate colored granular soil underlaid by a bright red porous clay. Here some 50,000 one, two and approaching three-year trees are also in a fine healthy state;—one feels inclined to say, hard to beat anywhere. Some years since I visited the Batavia Estates, situated in the State of Oaxaca in the Tuxtepec district, and I saw there a few very fine trees of *Hevea*, then some six or seven years of age; and at La Junta Estates some *Hevea* trees were growing vigorously when last seen by me some years ago. In short, I have no knowledge of any *Hevea* planted within the tropical rain forest districts of south-eastern Mexico that has failed to flourish, tho I believe that in several instances where a few trees have been planted and neglected they have disappeared in time, undoubtedly owing to the attacks of gophers or deer.

#### A NEW CASTILLOA TAPPING KNIFE.

ONE of the objections to methods that have been used in the past for tapping the *Castilloa* is that the trees were often left in such condition that they were either permanently injured and died, or required a long time in which to fully recover and heal over the wound left by the tapping process. Plantation men have been striving for a number of years to produce an instrument that would successfully tap trees and

still leave them in a healthy condition. The secretaries of the Obispo Plantation, Walter E. Holloway and D. H. Gardner, have designed a new knife which, it is said, will allow the incision to be made in such a manner as to permit perfect flow and the most rapid healing of the wound.



Instead of cutting out a piece or strip of the bark in the usual way, the bark is merely raised from the tree sufficiently to permit the escape of the latex, after which it can be closed down to its original position and allowed to grow fast. Instead of the large ridge which results from the healing process following the usual method, there is very little scar left by the new process after the parts are united. This is a great advantage, since it permits a continuous tapping of the tree immediately above or below, or even directly on top of the previous cut. In other methods the scars are often so large that they prevent an unobstructed flow of the latex if the tree be tapped near the old wound. In time the tree becomes so covered with these old wounds that it is rendered valueless.

One excellent feature of this new knife is that it is provided with a movable gauge attached with thumb screws behind the cutting edge, so that the teeth can be quickly adjusted to the proper depth for a tree of any age. This prevents the knife from cutting too deeply through the bark, which contains the latex, and from severing the cambium. The equipment is light and is convenient to carry.

Should be on every rubber man's desk—Crude Rubber and Compounding Ingredients; Rubber Country of the Amazon; Rubber Trade Directory of the World.

## Rubber Importers as Planters.

It was only a few years ago that the most sceptical of all the rubber men, as to any possible future for plantation rubber, were the rubber importers. They were far more positive and petulant in their scorn for all who planted than were the manu-

rubber planting. And that is the comfortable way in which to view progress. There was one firm of importers, however, that believed enough to start its own plantation, and to administer it manfully. Plantation "Serra" in the State of Bahia, Brazil, is owned by the New York house, A. Hirsch & Co., well known as rubber importers. They have turned away from *Castilloa*, from *Hevea* and even *Ficus*, and gone in for *Manihot*, planting on a very large scale. One of the sons, Mr. I. Henry Hirsch, is in active charge of the plantation. The illustrations show the manager and a body of his field hands.

Incidentally it might be well to recall that American manufacturers have not in the past half appreciated the value of Ceará rubber. On the other hand there are scores of large European manufacturers—the Michelin's for example—who have been able to get better results in many lines of goods with Ceará rubber than with Pará even. It is therefore of the greatest interest to the trade that a firm like Hirsch & Co. has gone into such planting. It will undoubtedly aid not only in the production of more and better Ceará rubber, but in showing American manufacturers the true value of this excellent gum.

### MR. WILLIS MISQUOTED.

In the *Boletim da Superintendencia da Borracha*, No. 1, published May 30, the statement is made that Mr. John C. Willis, the director of the Botanical Gardens in Rio Janeiro, had been experimenting with the *Manicoba* tree and that this rubber gave as good results as *Hevea*. This is a misquotation, as Mr. Willis says there is only one *Manicoba* in the botanical gardens and that this has never been tapped. The experiments that he has been making have been confined exclusively to the *Hevea* tree.



MR. I. HENRY HIRSCH, PLANTATION "SERRA."

facturers. Gradually, however, they changed; and it is probable that most of them today think that they always had faith in



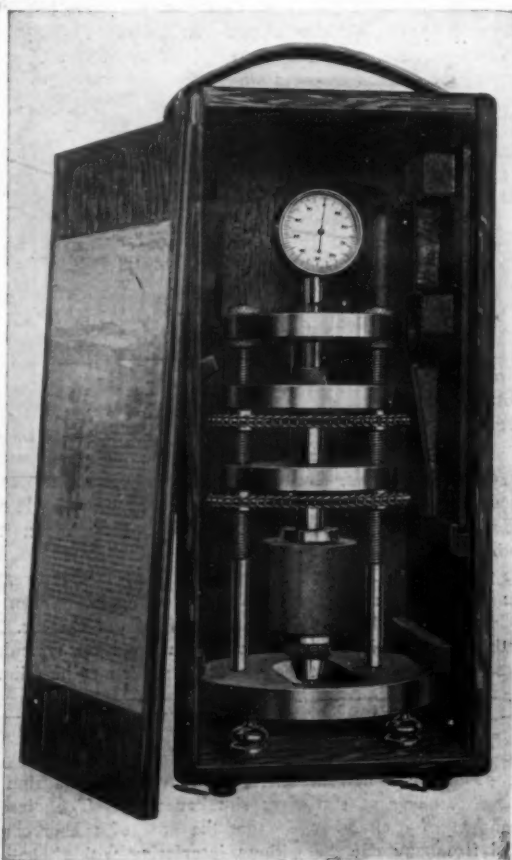
CEARA RUBBER GATHERERS ON PLANTATION "SERRA."

## The Plastometer—A Rubber Testing Instrument.

By B. Denver Coppage.

THE instrument illustrated here, known as "The Plastometer," was exhibited by the inventor at the Rubber Conference. It was designed primarily to meet the needs of its manufacturers, The Pusey & Jones Co., manufacturers of paper making machinery.

The rubber covered rolls used in the "press part" of paper machines must be covered with "densities" that have been selected suitable to the paper to be made; and it is very important that the "density" be as ordered or the rolls will not be acceptable to the purchaser.



THE PLASTOMETER.

Since the adoption of this instrument, there is no uncertainty of knowledge as to the "density" of the covering of the roll, conforming to the "density" of samples selected.

The Plastometer, as its name implies, is an instrument by which the quality plasticity may be indicated. Its method is direct reading without injury to material tested; i. e., unlike a "tensile-test" in which the material is tested to its destruction. The Plastometer does not make a vicarious test. It is, therefore, to be classed with the most advanced ideas, as a means of determining rubber quality. Plasticity is so intimately related to the group—elasticity, softness and hardness, density, resiliency, etc.—as to indirectly indicate them.

The fundamentals of the Plastometer are the combination of parts whereby a weight may be supported wholly upon a sphere, said sphere being sufficiently hard to sustain such load without appreciable deformation, and means whereby the amount of penetration or indentation of said sphere into the material upon which it rests, at the expiration of one minute, can be determined. It will be evident that the dimensions of the sphere can be selected to suit the weight to be applied and the materials to be tested, or the mass of the weight varied, or both, and that the amount of penetration may be measured by an instrument integrated to various units of distance. For example, most grades of commercial rubber may be tested by the Plastometer in which the sphere is a hardened steel ball,  $\frac{1}{4}$  inch diameter, upon which is placed a weight of one kilogram, the penetration or indentation of such ball being indicated by the micrometer dial gage, indicated to one 1/100 millimeters. The softer materials would require larger ball or less weight or both. The harder materials would require smaller ball or more weight or both. It is possible that certain very hard materials would require a longer application of the weight than one minute and it is possible that very soft materials would require a shorter application of the weight than one minute to obtain satisfactory indications. In each case, the principle remains the same, that of lowering without shock a weight upon a sphere which is free to penetrate material being tested upon which the sphere rests, and means whereby said penetration may be observed.

The Plastometer has been designed with a base particularly adapted to the testing of rubber covered rolls of more than 6 inches diameter. Our type "C" instrument has additional fixtures which adapt it to being mounted in a vice for testing small samples or pieces of rubber or other material. It is evident that the base could be altered to make it suitable for testing material in any form.

It seems possible that through the co-operation of some of the societies for testing materials, or a Bureau of Standards, that the Plastometer may be utilized to establish a standard scale of qualities for rubber. The inventor believes it is possible to utilize the Plastometer to determine raw rubber values, since it lends itself to the determination of "effect" resulting from "cause"; i. e., an increase of quality, due to treatment, or a decrease of quality, due to environment; such as deterioration of a rubber sample which is subjected to or acted upon by such causes as time, light, gases, acids or fatigue due to mechanical work, etc. These observances may be made for the reason that the test pieces are not affected by the Plastometer tests and can, therefore, be re-tested again and again after a lapse of time during which the sample has been subjected to some influence or treatment, the test being repeated hourly, daily or weekly, etc., as desired. To make tests of this sort, the inventor recommends that test pieces be prepared in a definite way and be contained in a metal ring of given dimensions, say five centimeters diameter and two centimeters thick, such samples being adopted for purposes of selection and standardization. It is obvious that samples of uniform dimensions are desirable.

The inventor believes that such samples should be kept and transported in air-tight, light, containers, such as are used for mailing bottles of liquids; i. e., the screwed-top, paraffined receptacle of suitable diameter and length for the number of

samples contained. Each sample should be dated and marked with Plastometer reading and such other designating remarks as the maker deems necessary, directly upon the ring or upon a label attached thereto.

The Plastometer is being used by many leading rubber manufacturers in this country and by users of paper making machinery in this country and abroad. It could, undoubtedly, be made useful to manufacturers of soap, glue, etc. It can also, perhaps, be utilized to standardize raw rubbers so that the purchaser can have determined the values of his shipment without the delay which seems necessary under present methods used for such determinations.

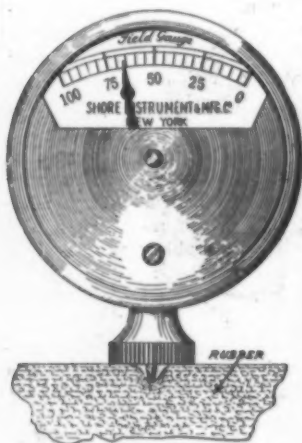
The instrument is in its infancy, having thus far been developed by a buyer of rubber. Its further development for the benefit of the rubber trade will, undoubtedly, depend upon the engineers and chemists directly associated with the rubber trade.

#### THE SICO YIELD GAUGE.

**N**UMEROUS methods have been devised for measuring the hardness of metals and other comparatively hard substances, but until recently no way had been found to dependably measure the hardness or flexibility of such substances as rubber, leather or compositions of like nature. Testing rubber in its elastic state by merely feeling it and compressing it with the

fingers is at the best very unsatisfactory even for experts, for it is difficult for one to determine what another has meant by hard, medium or soft.

In order to obviate these difficulties and to bring about a standard method of determining the exact state of elastic rubber, a company which makes a specialty of manufacturing gauges for particular purposes, has introduced an instrument known as the "Sico Yield Gauge," which is illustrated herewith. This gauge is intended to substitute the uncertain element of feeling, by merely pressing



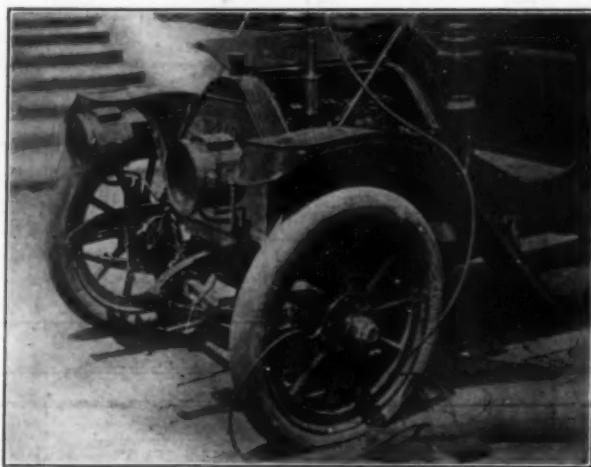
the sensitive blunt point against the material to be tested.

The indicating hand normally rests at 100, so that when very soft rubber is tested and a deflection of 5 degrees results, there is a resistance to yield of only 5 per cent., while the yield is 95 per cent. Therefore the 5 per cent. may be considered as the hardness of that sample. On the other hand, if a substance having practically no yield be tested, and the pointer swings over to zero, it indicates no yield or 100 per cent. hard. The gauge is pressed down until the knurled knob rests squarely upon the material to be tested, when the number indicated on the scale shows the percentage of yield or softness of the material.

It is said that the gauge is finding wide use in testing automobile tires. A good tire shows a yield of about 55 to 60 per cent while a poor one shows only from 35 to 40 per cent. This, however, does not imply that the softer the tire the better it is. There is a limit up or down and when once the standard has been determined, comparative tests are easily and quickly made by means of this gauge. [Made by the Shore Instrument & Mfg. Co., 555 West 22 street, New York.]

#### AUTOMATIC AUTOMOBILE-TIRE PUMP.

**E**VERY one who uses an automobile knows how unpleasant it is if an accident occurs in some place where there is no garage to pump up the tires. The pump shown in the accom-



panying picture is a useful invention. In order to inflate the tire, the air pump is connected with one of the cylinders of the motor and the power is turned on. The pumping is done very quickly and of course much better than by hand. When the tire is filled, the air-pump is screwed off.

#### NEW WRINGING MACHINE.

A new wringing machine with a pneumatic roller has been brought out in Germany under the name of the "Clothes Saver." It wrings the clothes uniformly dry, even if not specially arranged on the rollers. Buttons, hooks and eyes are no longer crushed, and consequently the clothes are not injured. It only requires one person's attendance, the washing going direct from the tub to the wringer.

The pneumatic roller can be pumped up like a bicycle tire, and if the air gives out it can be pumped up again. When the wringing is finished there is no need to let out the air. On the other hand, it is necessary to loosen the lever fastenings, so that the pressure against the pneumatic roller may be relieved.

#### A NEW SIX-DIE INSULATING MACHINE.

The Watson Machine Co. of Paterson, New Jersey, has applied for a patent on a new seamless rubber covering machine for covering as many as six wires simultaneously. The dies are independent of each other, so that the flow of rubber can be stopped from any one die without interfering with the others. It has a special device in the head which supports the wires so that the insulation is of uniform thickness. The machine can also be used for manufacturing rubber tubing or tape. The steam and water supplies are so arranged that water is led from the jacket directly surrounding the worm, while steam is applied only to the head; over-heating is avoided, and danger to the rubber because of heating is eliminated.

Most tire users have no doubt met with situations where some instrument which would pick small pebbles or other foreign matter out of their tires would have been found a most useful and welcome addition to their tool kit. An instrument intended for this purpose and known as a "tyre pick," is supplied on request by The Victor Tyre Co., Limited, of London, England.

## Two New Solid Tire Machines.

**S**OLID rubber tires were for a long time—and are now, in most instances—manufactured by means of the old method, in which the rubber is forced out through a die, or by means of the alternative method of building up the entire rubber

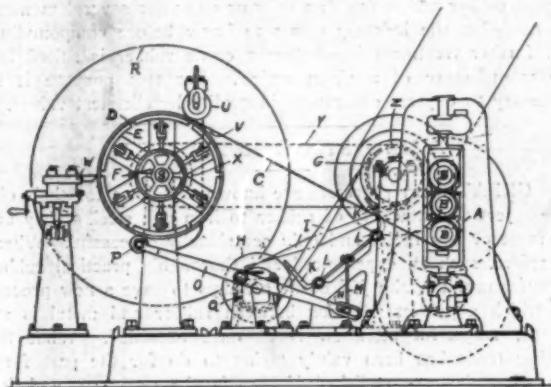


FIG. 1.—SIDE ELEVATION OF BRIDGE TIRE MACHINE.

portion of the tire by hand, in preparation for the mould. Two recent British patents, relating to a new method of building up solid rubber tires by means of specially constructed machinery, are briefly described herewith. The first of these, the invention of Robert and Jonathan Bridge, of the firm of David Bridge & Co., Limited, Castleton, England, relates to the building up of a tire in continuous layers of rubber taken from a calender which forms the rubber in sheets as it comes from the heating mill; of an adjustable mandrel upon which the metal base of the tire is placed, and of a cutting apparatus by means of which the tire is turned to the desired shape after wrapping.

The rubber is first passed from the heating mill to the calender A (Fig. 1), which is provided with three rollers B B. From this point the sheets of rubber may be cut into strips and conducted to more than one mandrel, altho only one is shown herewith.

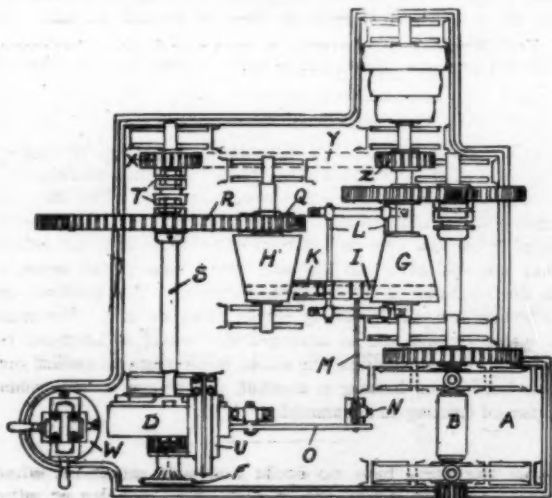


FIG. 2.—TOP VIEW OF BRIDGE TIRE MACHINE.

At C is shown the strip of rubber passing from the lower roller B to the mandrel D. This mandrel is usually of the split ring type, so that it may be collapsed for the purpose of removing

the rubber tread after the wrapping process is completed. It is held in place by means of an adjustable expanding ring E which is manipulated by the hand wheel F.

The speed regulating mechanism is the most interesting feature of this machine. It consists of two cone-shaped pulleys G and H (Fig. 2), connected by a belt I which is automatically moved over the pulleys as the tire increases in size. This is accomplished by means of a fork K carried on the rods L L and connected with a lever M pivoted to the frame at N. This lever engages with the slotted end of the lever O, the opposite end of which has a roller P which bears against the tire as it is being built up on the mandrel. As the tire increases in size during the winding process the series of levers causes the belt I to be moved across the cone-shaped pulleys so as to reduce the speed of the pulley H. This pulley, having a pinion Q which engages the large gear R, the speed of the tire periphery is kept constant throughout the

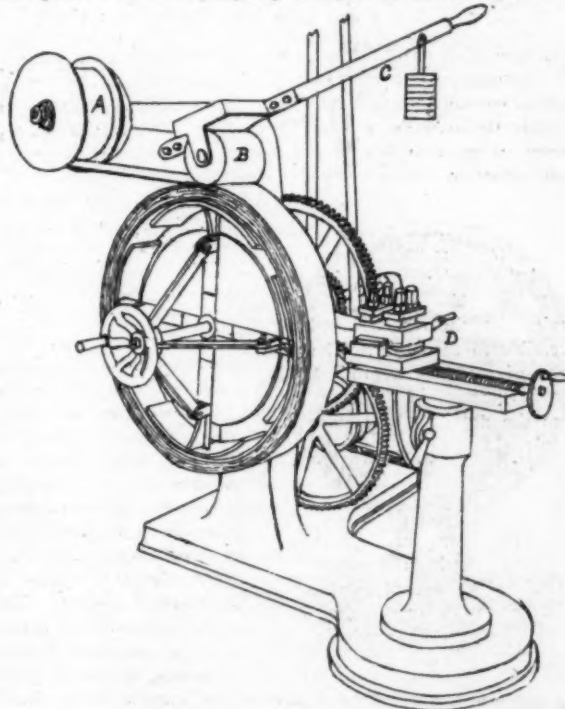


FIG. 3.—PRICE SOLID TIRE WRAPPING MACHINE.

winding process. The shaft S also has a clutch T by means of which the mandrel D may be thrown out of gear without stopping the calender.

The heavy roller U is employed to press the strips of rubber together so that all air is excluded from the tire. In addition to the roller a vacuum pump is sometimes used, with the open end of the air pipe placed in the angle V so as to withdraw the air away from the rubber strip as the latter is being wound.

After the winding is continued until the tire is of the desired thickness, the tread may be turned to the required shape by means of the cutting apparatus W. This cutter may be of the compound type so that the knife may be operated in any direction, and it may also include a buffing or finishing wheel to follow the cutter. The clutch T may be disengaged from the gear R and engaged with the gear X which is driven by a chain Y from the gear Z. This also gives a higher speed in the shaft S which is desirable for the cutting and finishing process.

The machine shown in Fig. 3, also made by David Bridge & Co., is constructed after the Price patent and is similar in principle to the machine described above. Instead of feeding the rubber to the mandrel from a calender it is fed from a roll A and is kept free from air by means of the roller B. It will be seen that this roller is pressed down onto the rubber by the weighted lever C, thus gaining a more solid mass entirely free from air pockets. The same or a similar cutting apparatus D is employed for shaping the tire to the required section to suit the mould.

### SOME RUBBER PROBLEMS.

IN his paper lately read before the Liverpool section of the Society of Chemical Industry Mr. H. E. Potts dealt with various questions now engaging the attention of rubber manufacturers. He first gave some interesting particulars as to the latex of *Hevea Brasiliensis*. Investigations as to the nature of coagulation, he remarked, have not as yet reached a final stage, although this subject is of extreme importance in connection with the quality of the crude rubber to be produced.

He further treated in detail the difference between plantation and wild Pará rubbers, the latter seeming harder, more "nervy" after rolling and, in many cases, more consistent in quality. Among the causes to which this alleged superiority has been attributed is the premature tapping of plantation *Heveas* and the use of acetic acid as a coagulant in place of smoking as with wild Pará. Byrne has, however, taken out a patent for smoking plantation Pará.

With regard to testing rubber Mr. Potts urged that the present custom of purchasing large quantities of crude rubber from a small average sample was not an advisable method. He suggested the establishment of a warehouse for all the arrivals of plantation rubber, where experiments in vulcanization could be carried out, the results of which, together with samples, being accessible to the buyer. The manufacturer would thus be assured of receiving a product which, under like circumstances, would vulcanize in the same manner, and would be exempted from the necessity of making new vulcanization tests of each sample. In addition, it would be possible to ascertain the nature of the factors which affect the quality of the crude rubber and its vulcanization.

Another subject dealt with was the chemical composition of technically pure crude rubber. Under this head various laboratory methods were discussed for the removal of the protein. The constitution of rubber was then treated with reference to the investigations of Harries and other experts.

The problem of synthetic rubber was next discussed, Mr. Potts distinguishing between the polymerization of isoprene into rubber and the production of isoprene as the two stages in the process. He further expressed the opinion that it was possible to produce from isoprene a substance resembling natural rubber, and that homologues of rubber could be obtained in the same way. Oil of turpentine had been the original basic material, but only had a yield of 10 per cent. in the first experiments, which proportion has since been increased. Other substances had been tried, Bayer of Elberfeld using Kresol and the Perkin group fusel oil. The latter is now, however, dear. The best prospects of success, Mr. Potts considered, lie with the process for the production of isoprene homologues. He finally quoted the statement of Dr. Hoffmann, of Elberfeld, to the effect that a long time would elapse before synthetic rubber became an article of commerce.

Next in order came the problem of vulcanization, the speed of the process depending on the nature of the crude rubber employed and upon the method of vulcanization. If the co-efficient of vulcanization ascends, the hardness of the vulcanized article increases. Thus, it is added, the highest degree of vulcanization represents ebonite or hard rubber.

Reclaimed rubber is the last subject treated. In this connection Mr. Potts states that it has so far been found impossible to produce from waste rubber a substance equal to the crude article, and equally free from sulphur. According to Hinrichsen and others, a product containing a reduced proportion of bound sulphur is obtained by treating the waste rubber with zinc and with a mixture of benzine and alcoholic soda-lye. This contention has been criticized by Alexander.

In conclusion Mr. Potts remarked that it is easy to distinguish a good rubber article from an inferior one after several months' wear. What the industry wants to know before compounding and further treatment is whether a crude rubber is suited for the manufacture of a given article. For this purpose it is necessary to express differences in quality by chemical values.

### A NEW STICKING PROCESS.

A GREAT many processes are known that have for their object the attaching of rubber to iron and steel. They are all more or less faulty and only occasionally successful. When, therefore, such an experienced and thoroughly practical rubber manufacturer as John J. Voorhees claims to have a new process by which a perfect adhesion between rubber and metal is attained, respectful attention is at once accorded. What the rubber trade has been vainly trying to do for the past forty years is at last accomplished, if Mr. Voorhees says so; and that is his statement. The Voorhees Co. calls the new process "Rub-Steel Combination," and is offering it to all who are interested. The illustrations accompanying show how thoroughly rubber and metal may be joined by this process.

The larger cut shows two flat pieces of steel, one-quarter of an inch thick, vulcanized together with a surface of rubber between



TWO PIECES OF STEEL WITH INTERVENING LAYER OF RUBBER.



THE TWO PIECES TORN APART, SHOWING THE RUBBER ADHERING TO THE STEEL.

them, one piece of steel projecting beyond the rubber in one direction and the other piece of steel projecting beyond the rubber in the other direction. The adhesion of the steel to the rubber in this combination was given a very severe test, one steel end being fastened in a vise while a large monkey wrench was applied to the other end, and it was necessary to exert a great deal of force before the two were torn apart.

In the other cut two steel discs are shown, vulcanized to a round bar of rubber. The discs are furnished with rings, in



TWO STEEL DISCS VULCANIZED TO ROUND PIECE OF RUBBER.

which hooks are fastened, and in this way the tension is applied. When the photograph was taken from which this cut was made the rubber had been stretched to two and a half times its normal length without any suggestion of parting from the steel. [The Voorhees Rubber Manufacturing Co., Jersey City, New Jersey.]

## A RUBBER EXPOSITION IN CALIFORNIA.

EVERYONE who attended the Third International Rubber Exposition, held in the Grand Central Palace in New York, a year ago, will remember the wonderful exhibit made by Brazil. In area occupied, in completeness, in artistic arrangement, in general attractiveness, in the interest it created and in the crowds that visited it, it was altogether the most prominent feature of the



DR. EUGENIO DAHNE.

entire exposition. It was under the charge of Dr. Eugenio Dahne, who for many years was Commissioner General of Brazil—representing the Department of Agriculture, Industry and Commerce—to the United States and Canada.

It was quite natural that the exhibit under his charge in the exposition should be altogether a successful one, as Dr. Dahne had had much previous experience in this line. He represented the Brazilian government at the World's Fair in 1893, and also at the later World's Fair held at St. Louis in 1904.

He represented the government of the state of Sao Paulo at the Seattle Exposition in 1909, and two years later he was sent on a special mission by the Brazilian government to report on the expositions at London and Turin. So it is obvious that he was as well equipped as experience and extensive observation could make him for the successful management of the Brazilian exhibit in the New York Exposition held last year.

But Dr. Dahne now intends to make all this experience count for a still more important project than any he has yet engaged in. He is planning a comprehensive exhibition of all kinds of tropical products, but particularly rubber, to be given in connection with one of the international expositions to be held in California in 1915. In order to devote all his energy to this project he has left the position which he has held for so many years with the Brazilian government.

There will be two international expositions in California in the year 1915, to be held in honor of the opening of the Panama canal. One, the Panama-Pacific International Exposition, will be held in San Francisco for nine months, from the middle of February to the end of November, and the other, the Panama-California International Exposition, will be held in San Diego, beginning January 1, 1915, and continuing through the entire twelve months. Both of these expositions have been duly authorized by this government, and the initial work on both of them is being energetically pushed. Dr. Dahne has not yet decided with which exposition he will ally his exhibit, this decision depending upon which one offers the best advantages.

It is his intention to have this rubber show entirely different from any of its predecessors, for in addition to the indoor exhibit he expects to have a very interesting feature in the way of an outdoor exhibit, including the different rubber producing trees and plants—which it will be possible, owing to the mild climate of Southern California, to show in actual cultivation. He has outlined his general idea as follows:

"The general plan to be followed would be, to have the visitor enter first a large open court or *patio*, artistically arranged so as to represent, on one side a jungle scene, with rubber-gatherers at work tapping the trees, collecting the latex and smoking it; on the other side a rubber plantation, with coolies at work, showing how plantation rubber is cultivated and treated. The figures, of course, would have to be wax, but the trees and plants would be real ones, brought from the Orient, Central and South America, and kept growing in the soil, representing the different species that produce rubber. The *patio* would be surrounded by covered arcades where the different kinds of crude and plantation rubber are shown and the various systems of treatment and shipment are illustrated. Here too would be exhibited all the variety of tools and implements and the fertilizers used on plantations. Lecturers will be on hand to explain everything and to further illustrate by moving-pictures, what cannot be shown in *natura*.

"The visitor, having now learned how rubber is obtained, will then pass into the 'Rubber-Machinery-Hall,' where he will see all kinds of machinery—wherever possible, in operation—and learn how rubber is washed, dried and used in the manufacture of all kinds of goods. Here will also be the exhibits of auxiliary materials—on the one side chemicals, pigments, and compounding ingredients; on the other side cotton and other fabrics and reclaimed rubber.

"Finally, the visitor will reach the Manufactured Goods—or Sales Department, where he will see, arranged in groups, all kinds of manufactured articles showing the application of rubber in the automobile industry; electric lighting and transmission, etc.; surgery, dentistry and druggists' sundries; technology, science and art; roofing, flooring, paving; household and domestic articles; clothing industry, and toys, toilet and fancy articles."

In order to get a suitable building which shall be devoted to rubber and other tropical products, the exposition management requires that Dr. Dahne shall guarantee to occupy 100,000 square feet of space. He hopes to occupy a good deal more, because this is not a very large space considering that in addition to rubber, various food products of the tropics—coffee, tea, sugar, fruits, nuts, cereals, etc.—are to be duly exploited, leaving only part of the space for the rubber show; and out of this Brazil is expected to ask for a very sizable reservation. When one recalls that the New York Rubber Exposition occupied a floor space amounting to 160,000 square feet, it will be seen that Dr. Dahne's project is not over-ambitious. Of course, the amount of floor space, if applied for early enough, can be materially extended, but this tropical products and rubber section will be incorporated in the exposition if the rubber men and those interested in other products will give early assurance of occupying, between them, the 100,000 square feet.

Possibly the objection may be made that Southern California is in rather a remote corner of the United States and that it is a long journey from the Atlantic seaboard—which is true. But over against that remains the fact that Southern California is an all-the-year-around resort. Hundreds of thousands of easterners visit it in winter to escape the cold, and a vast army of people from the southwest interior visit it in summer to escape the heat; so that, even without the additional attraction of an exposition it has a continual crowd of visitors, and with this additional attraction the number of visitors would be largely increased. And such a section as Dr. Dahne has planned would undoubtedly prove one of the most interesting features of the general exhibition. Dr. Dahne is now visiting the principal rubber men of the East, with a view to getting them interested in this undertaking. With his wide acquaintance among the prominent rubber people of the United States, with his recognized position in the official circles of South America, with his long experience in exposition matters and his exceptional personal energy, this undertaking ought certainly to be most successful. If Dr. Dahne carries through his plan, there will be three

rubber expositions in quite rapid succession, tho in widely separated parts of the globe—first, the London Exposition, under the management of Mr. A. Staines Manders, who has organized the former London expositions and who also organized the one held in New York last year. This will open its doors on June 24 and continue to July 9. The second exposition will be held in Batavia from September 8 to October 10, 1914—with this California rubber exposition to follow in 1915. Dr. Dahne, it might be added, is now a resident of San Francisco, with an office at 1101 Merchants National Bank Building, in that city.

### THE RUBBER TRADE IN AKRON.

*By a Resident Correspondent.*

MR. B. G. WORK, president of the B. F. Goodrich Co., returned from Europe on September 17. Being interviewed in New York, he is reported to have said that the Goodrich factory in France, while not putting out a very large product, was in a very satisfactory situation. He states that the general automobile outlook in Europe is highly favorable, which argues for a good tire business; but competition among the tire makers is keen and the Goodrich company finds itself obliged to compete against many low-priced goods. He stated, according to his interviewer, that the company has at present no new financing in prospect nor any enlargement of the plant.

The recent reliability run, organized by the Washington "Post," from Washington through Maryland and Pennsylvania and return, was practically the first of its kind held in this country. It may be said that it emphatically demonstrated the suitability of the motor truck for country transportation, taking place as it did over ordinary roads, for much of the distance in comparatively poor condition. The purpose was two-fold, first to test the endurance of the various trucks and equipment, and second, to obtain data as to the economy of the motor truck in continuous day-after-day running on common highways.

Twenty-one cars took part, divided into seven classes, according to the load capacity of the various trucks. Every kind of vehicle was represented, from army ambulances completely equipped for the field to the huge eight-thousand pound Vulcan truck, the latter eventually proving itself the winner, notwithstanding its great weight, which severely handicapped it on the bad roads experienced the first day of the run. This truck was equipped with Goodrich demountable wireless tires and came through with an unblemished record so far as tire troubles were concerned.

The route presented every possible variation in material, state of repair and grades of roads, and was expressly chosen to give as great a variety and as strenuous a test as possible.

The book "What's What in Tires" has just been re-issued by the Firestone Tire & Rubber Co. This new edition is elaborately gotten up and is even more than ever complete in its information as to tire and rim building; and car owners will find it of great help and interest.

Few dinner pails were carried to the Firestone plant in South Akron Wednesday, the restaurant for employes having been opened on that day in the new building opposite the factory; and the restaurant helpers found themselves swamped when the noon whistle blew. Officials of the company made a tour of inspection Tuesday and pronounced everything ready for the formal opening. Undoubtedly it is the finest dining room of its kind in the city. The equipment is modern and complete, with a seating capacity of 250, and meals are to be served at cost. There has been a dining room in operation for office employes for some time, but until now no such provision had

been made for factory employes. The new restaurant is an addition which will be heartily welcomed by all.

The Goodyear Tire & Rubber Co. has introduced a new tire which is specially intended for use on electric vehicles. It has a special fabric lining, designed to combine reduced consumption of power and increased wearing qualities. A layer of light blue rubber is inserted just over the breaker strip, which acts as a guide to indicate when the tire needs retreading.

That its sales for the present fiscal year will reach the \$35,000,000 mark is the belief expressed by officials of this company, the 40 per cent. gain for the months of June and July over the business of the corresponding months a year ago contributing to this optimistic anticipation. This is about \$3,000,000 better than the expectations of the company in the early spring, which at that time were for a 25 per cent. increase over the business of 1912.

In the case of the Goodyear company against George Beabos, convicted of stealing fabric from the hose department of the company, a minimum fine of \$10 was imposed instead of the full penalty in convictions of this nature, leniency having been extended in view of the fact that his family of five children was soon to be increased by another birth.

Announcement has been made by the Diamond Rubber Co. that it will hereafter be able to meet even unusual demands for its tires, having increased its maximum daily capacity more than one-third.

Men have been sent from Akron to supply the vacancies caused by the discharge of a number of employes of the Mansfield Tire & Rubber Co., of Wooster, Ohio, after an absence which the company had refused to grant for the purpose of attending the county fair.

The National Cement and Rubber Co., Toledo, Ohio, are manufacturing a self-curing cement for tube repairing, which is known as "Tire-Sav." It is a rubber compound said to effect a more secure repair than the ordinary patch.

H. W. French, of Akron, and Fred Gove, of New York, formerly representatives of Ed Maurer, have incorporated a new company for selling and dealing in crude rubber, with offices at 82 Beaver street, New York, and Second National building, Akron, Ohio. The officers are H. W. French, president; F. S. Gove, vice-president and treasurer, and C. E. Sorrick, secretary.

The Knight Tire & Rubber Co., Canton, Ohio, has established a branch office at St. Louis, Missouri.

### THE PROPER INFLATION OF TIRES.

Mr. Greenwald, of the service department of The Firestone Tire & Rubber Co., in a brief treatise on the proper inflation of tires, includes the following suggestions:

"Inflate slowly at first. There are a great many views as to the proper pressure, but it is ruleable to inflate the front tires to a pressure equivalent to seventeen or eighteen times their cross-section and the rear tires to a pressure equivalent to 20 times the cross-section; for example, 34 x 4 tires on front wheels should have from 68 to 72 pounds pressure, while on the rear wheels the pressure should be about 80 pounds. The tire should round out pretty well and not flatten under the weight of car and passengers. Reinflate the tire occasionally, as the inner tubes are permeable. It is not advisable to inflate the tires with the exhaust from engine. Oil and certain gases are destructive to the rubber."

## THE RUBBER TRADE IN BOSTON.

By a Resident Correspondent.

FALL business is unevenly distributed. While some lines in the rubber trade are lively, others lag to such an extent that complaints are numerous. Fire hose contracts are scarce, presumably because of the increased demands upon public treasuries. Manufacturers of belting note the tendency of large industrial concerns to allow manufacturers or dealers to carry stock rather than have reserve stocks in their store rooms. Rubber footwear trade is still quiet, but the clothing manufacturers report sales above the average, with the outlook bright for a steady and continued demand. Automobile tire makers are the busiest of all rubber goods manufacturers, the strike in Akron having led to a shortage, which has resulted in advantage to many tire manufacturers hereabouts. South Braintree seems to be a growing rubber manufacturing center, there being five concerns in that town now interested in one way or another in the industry. Besides the scrap rubber warehouse of the J. H. Stedman Co., mentioned elsewhere in this number, there are the Monatiquot Rubber Works Co., manufacturers of naturized rubber; the Mayflower Rubber Co., manufacturing rubber heels, soles and arch supports; the Boston Rubber Cement Co., and the Commercial Fibre Co.

I understand that William Killion & Sons Co., manufacturers of rubber shoe pads; are to have a new, perfectly appointed, up-to-date factory at Harrison Square, one of the conveniently situated outlying sections of Boston.

Some very valuable rubber was stolen last month, if reports in the daily papers are correct. They say that a man named Callahan, a freight clerk in the employ of the N. Y., N. H. & H. R. R., offered for sale at 30 cents a pound a quantity of crude rubber which he claimed to be worth \$2.25 a pound. Pretty nice rubber, that. It's a good many months since Boston dealers have seen any crude rubber worth \$2.25 a pound. But perhaps Callahan is an expert and knew good rubber when he saw it. The result of his entrance into the crude rubber industry was that not only was he arrested, but freight checkers named Malony and Noonan with him, on a charge of larceny of 274 pounds of crude rubber, valued at \$600, a portion of which was later recovered.

James H. Stedman, treasurer of the Monatiquot Rubber Works Co., was the host recently to about five hundred guests who gathered to celebrate with him the completion of the new barn on his country estate at New Sharon, Maine. The guests came from the neighboring farms and towns, and were entertained by a ball game, a flag raising and a dinner, which was featured by the presence of six huge pots of beans baked in the ground and done to an epicurean turn.

The Patterson Rubber Co., of Lowell, is turning out an average of sixty tires per day, with a demand which absorbs the total output. There is a steadily increasing call for the specialty of this concern, which speaks most favorably for the success of this comparatively new enterprise.

E. H. Hicks, of the Stoughton Rubber Co., returned the middle of last month from a successful trip which covered the large cities of the Middle West. He reports a generally optimistic feeling regarding the coming season's business, based on the condition of the crops and the prosperity of the farmers. E. F. McGowan and Fred C. Prince have recently returned from a vacation tour in Europe. They report that the best English styles in overcoats and raincoats which they have seen are those made in the United States. Of course, modesty prevents their

mentioning the name of the makers of these English style coats.

Things go humming right along at the factory of the Converse Rubber Shoe Co., at Edgeworth, Malden, Massachusetts. A full complement of hands is at work, and there are rubber shoe orders enough ahead to keep them busy until the arrival of the fall demand. The company's specialties in tennis lines have proven most popular, and orders are already coming in for early spring delivery. This company makes two special types of rubber heels, which have a good sale. In addition, the manufacture of tires—all carefully hand made—has been carried on in a conservative way; and these tires have been found so satisfactory and durable that this department is likely to be greatly enlarged the coming season. At the factory are shown tires which have stood severe tests, some of them having run over 4,500 miles. President Converse is giving his personal attention to the details of the business and is at the factory every day since the resumption of work after the shut-down of two weeks in mid-summer.

Years ago, welt shoes, whether hand sewed or made on Good-year machines, contained, between the outer and the inner soles, a filler, sometimes of leather, oftener of felt or tarred paper. This was necessary simply because there was space to fill; no wear came on it, and none was expected of it. When the welting machine was new and just beyond the experimental stage, a Brockton shoe manufacturer secured one, to try it out. In the factory were a large number of hand workmen, who foresaw, in the success of the machine, a loss of their jobs. While the machine was on trial, the manufacturer, wishing to keep his workmen, set them to bottom-filling the shoes soled on the welt-machine.

Meanwhile the foreman of the room was experimenting on a plastic bottom-filler, and had mixed up a lot of rubber cement with powdered cork, to be used in place of the leather or felt. This was to be placed in a "gob" in the space to be filled, and spread evenly over the insole, from welt to welt. Shoe makers truly believe that "there's nothing like leather," and they saw, in the event of success of the new filler, a further possibility of losing their jobs. But how to circumvent the foreman was a problem. The next day an advertisement appeared in the local paper, "Wanted, three plasterers, apply at—," the factory where the cement was being used; and sure enough, a plasterer, in white overalls, his kit of tools wrapped in a big cloth, applied for a job. The manufacturer was non-plussed, and started an investigation. It was not until he inquired at the bottoming room that he got any information. Answering his inquiry if anyone knew of the advertisement, a workman said: "Perhaps they want a plasterer to spread that new filler." The manufacturer peered into the barrel indicated, and inquired what it was. The foreman explained, and was ordered to "Chuck that stuff out of the window," the employer remarking that he wanted no cork stuff in his shoes—nothing but leather. The workmen gained their point, but the ingenious foreman persisted in his experiments (tho perhaps elsewhere) and as a result a compound of rubber cement and cork is now almost universally used as a filler in welt shoes, having been found noiseless (preventing the squeak) and waterproof, besides being sufficiently ductile to allow the inner sole to conform somewhat to the shape of the sole of the foot on which it is worn.

In carrying out the plans of the Chamber of Commerce Committee to investigate the extent of the manufacturing resources of Boston, thus becoming familiar with the various industrial plants in the metropolitan district, etc., a delegation of seventy members, in charge of Bernard J. Rothwell, made an initial visit, on September 18, to the plant of the Hood Rubber Co., at Watertown, where they were shown all its departments and workings. The committee expressed itself as well pleased with the visit and exceedingly interested in all the details.

### THE RUBBER TRADE IN RHODE ISLAND.

*By a Resident Correspondent.*

THE rubber trade throughout Rhode Island is in good condition, with encouraging prospects, the majority of the factories having orders enough on hand or in sight to necessitate operation on an overtime schedule. In fact, there is said to be a greater number of orders in the hands of the rubber companies at this time than for the past several years. Many of the plants are unable to secure all the experienced hands they desire, and tho several are hiring help from Massachusetts, there is a steady and increasing demand for skilled operatives in all the local plants.

After a shut-down of four weeks for overhauling of plant and taking an account of stock, the Woonsocket Rubber Co. resumed operations on August 22, at the Alice mill at Woonsocket, and at the mill at Millville, when the calendar, cutting and making rooms at each plant began work. The following day every department in both mills was in full operation, with orders on hand for full capacity for several months and others in view. Nearly 2,000 operatives are affected by the resumption.

A new vulcanizing plant is being erected by this company as an addition to the Alice mill. It is to be four stories in height, 80 feet long and 60 feet in width, and will be of brick. The Eastern Construction Co. was recently awarded the contract, and work is to be pushed as rapidly as possible, about ten weeks being the time estimated for completion of the structure. It will occupy the site of the present carpenter shop, which is to be torn down, and will have a large basement of cement the entire size of the building. The cost of the addition will be about \$35,000.

Good progress is being made on the new buildings, additions and improvements that are being erected at the plant of the National India Rubber Co. at Bristol. Contractor William G. Murphy of Warren, has a large force of men employed on the foundations and walls for the temporary shop of one story, which is nearly completed. This building is to be 141 feet in length and 68 in width. The steel and lumber for the new structure to be erected in addition to the wire drawing plant are on hand and work will be started in a short time. This building is to be 218 feet long and 140 feet wide constituting a material increase to the company's plant.

There are two other buildings to be remodelled and another new building to be erected, in which the "slicing" department is to be located. It is expected that several months will pass before all the additions and improvements are completed. In the vulcanizing department the old vulcanizers are soon to be discarded for new ones, which will require only one-fifth of the time of the old ones to "cure" the rubber goods manufactured in the mill.

Much is expected of the new vulcanizers that are to be installed, as it is claimed that they will revolutionize the old-time methods introduced by Goodyear more than a half century ago. This vulcanizer has been adopted by the United States Rubber Co. and the first one is being set up at the National India Rubber Co.'s plant at Bristol. While there is much secrecy surrounding it, the claim is made that an hour and a half will be sufficient time in which to vulcanize rubber footwear, hose, wire insulation or any other of the products manufactured in the Bristol mill. This will be a great saving in time, for it takes from six to seven hours at present under the old system.

The method of curing by the use of this new machine is said to be altogether different from the old Goodyear process. While steam heat, or dry heat, generated from a steam plant, served its purpose for a long time, it is superseded, in the new vulcanizer. It is claimed that better results will be obtained in the handling of rubber goods with the new vulcanizer and

that the "life" will not be taken out of the goods so much as under the old heat system.

John T. Ashton, for many years an accountant in the office of the National India Rubber Co., and Miss Sarah E. Gladding, were married the past month in Bristol. After the marriage a wedding trip was taken through the White Mountains, following which Mr. and Mrs. Ashton have made their home in Bristol.

At the first meeting of creditors in the bankruptcy case of the Consumers' Rubber Co. of Bristol—held before the Referee in Bankruptcy, Nathan W. Littlefield, on August 28—claims were allowed and filed and a trustee chosen, Mr. Robert S. Emerson, a member of the committee appointed to investigate the affairs of the company in the interest of creditors, having been elected to this office, under \$5,000 bonds.

Among the individuals, firms and corporations in Providence on whom assessments of \$50,000 or over were levied, according to the report of the Board of Assessors filed early in September, are the following: Joseph Banigan estate, \$1,036,180—a decrease from 1912 of \$225,340; Joseph Banigan Rubber Co., \$161,000; Augustus O. Bourn, \$113,640; Bourn Rubber Co., \$147,000; Col. Samuel P. Colt, \$210,000; Davol Rubber Co., \$400,000; Charles Davol, \$57,160; Glendale Elastic Fabric Co., \$197,300; Mechanical Fabric Co., \$336,740; Rhode Island Hospital Trust Co., under the will of Joseph Davol, \$400,000; Revere Rubber Co., \$1,402,450.

The International Rubber Co. is assessed for \$130,680 and the O'Bannon Corporation for \$344,850, in the town of Barrington.

Clarence P. Bearce, chemist at the Washburne Wire Co., Phillipsdale, has returned from his summer vacation, which was spent at Oak Bluffs, Massachusetts.

A new steam engine of 350 horse power has just been installed at the plant of the International Rubber Co. at West Barrington, replacing one of smaller dimensions.

Mr. and Mrs. Walter S. Ballou returned on Monday, September 8, after an absence of several months abroad, most of which time was spent in England, motoring in Devonshire, Cornwall and the Midlands, later visiting London and Paris.

George Astill, general manager of the Glendale Elastic Fabric Co., has issued a statement denying the reports which have been current in this city and vicinity to the effect that the Providence plant of the concern was to be removed to Easthampton, Massachusetts. These rumors, it is claimed, have caused employees of the company to become dissatisfied and uneasy, and a number have left to find employment elsewhere. Mr. Astill states that the branch here is in a very healthy condition.

#### A TIRE FILLED WITH WET COMPRESSED CORK.

Compressed air is such a capricious entity that everybody would be glad to see it replaced, if it could be done, by something more controllable and just as resilient—but that something has not yet been found. A certain inventor, however, claims that he has succeeded—or if not quite—almost. He takes an inner tube such as is used in a pneumatic tire, and instead of filling it with air fills it with wet compressed cork, which, being extremely porous and full of air, has, according to his claim, more resiliency than solid rubber and almost as much as a pneumatic tire, while not being subject to the inconveniences that inevitably follow when a pneumatic is punctured—because a puncture in his cork-filled tire inflicts no great injury, the air still staying in the cork. If this wet compressed cork substitute works, it will be eagerly welcomed; but the inventor will first have to prove his case.

## THE RUBBER TRADE IN SAN FRANCISCO.

*By a Resident Correspondent.*

**W**ILLIAM NEWEITH, superintendent of the factory of the Gorham-Revere Rubber Co., was drowned in the Russian River a short time ago, as the result of an accident in which he was thrown from a motor boat, struck by the propeller, and so rendered unable to save himself. Mr. Neweith had been with W. J. Gorham since his boyhood and was recognized as one of the brightest men in the business on this coast. He was held in high respect and esteem by his many friends, and his death came as a shock to all. He was thirty-two years of age, unmarried, and leaves a father, mother and sister.

\* \* \*

The machinery of the Acme Rubber Co. has been purchased by Mat. Byrne, for the factory of the Goodyear Rubber Co., in this city. The Acme company was established a short time ago for the purpose of manufacturing articles of trade from a new substitute for rubber which it controlled.

\* \* \*

Mr. C. C. Case, vice-president of the Revere Rubber Co., is now on the coast, looking over the company's affairs here. Certain plans are being perfected whereby the wholesale stock of the United States Tire Co. will be brought down to the Gorham-Revere headquarters on Fremont street; and other changes are under consideration which will be decided upon and given out later in the month.

\* \* \*

The United States Tire Co. is laying in a big supply of non-skid tires for the coming season. The supervisors of San Francisco are trying out a plan on their asphalt streets intended to prevent slipping during wet weather. About an inch of the asphalt is scraped off, heated over again, and mixed thoroughly with a coarse-grained sea beach sand, which seems to give a very satisfactory, non-slipping surface.

J. S. Wiese, manager of the Los Angeles branch of this company was a recent visitor in San Francisco. Ed. Fleming, formerly of the San Francisco branch, has been transferred to Seattle, to succeed R. E. Dougherty as office manager there.

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The Ralphs-Pugh Co. expects to move into its new quarters at 562 Howard street by the first of October. Here it will have a two-story reinforced concrete building, and every facility for handling its increased business. A stock of footwear has been received and business is reported as moving along satisfactorily.

The Western Belting & Hose Co., at 518 Mission street, has secured the contract for supplying the fire equipment for the big fair which is to be held at San Diego, California. These fixtures are novel, being finished in gun metal. This same firm is also supplying the fire equipment for practically every building which will stand in the world's fair grounds at the Panama Exposition, to be held in San Francisco in 1915.

C. W. Martin, Jr., manager of the motor truck tire department of the Goodyear Tire & Rubber Co., reports that his department is kept constantly busy and he looks forward to a big year.

The American Rubber Manufacturing Co., of 408 Mission street, is now installing additional machinery, new calenders and mills, at its factory at Emeryville.

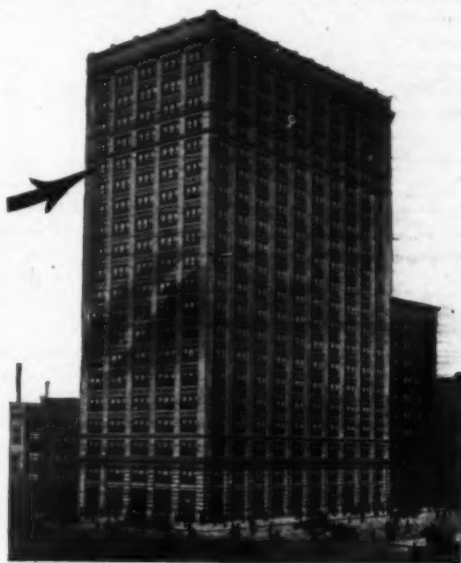
Rice & Davis, who have been conducting a tire establishment at Petaluma, California, have filed a voluntary petition in bankruptcy.

The Burton-Rounsaville Tire Co., of Los Angeles, has dissolved partnership, R. W. Burton giving a bill of sale of his interest to L. S. Rounsaville.

The Western Tire Co. has recently been incorporated at Oakland, California.

## THE NEW HOME OF THE RUBBER CLUB OF AMERICA.

**T**HE new home of the Rubber Club of America is in the Hess Building, 354 Fourth avenue, New York, a photograph of which is reproduced herewith, the arrow pointing to its offices on the sixteenth floor. It will be noted that they are situated



on the corner of the building, from which a magnificent view of the city and East River to the north and east is obtained.

This new building is a twenty-story structure on the southwest corner of Fourth avenue and Twenty-sixth street, and is one of the largest as well as handsomest of the buildings in the new uptown business district, of which Fourth avenue is the main artery.

The Rubber Club offices are in charge of the secretary, H. S. Vorhis, and ample facilities are available for carrying out the work that is being outlined by the Executive Committee.

## THE 1913 YEAR BOOK OF THE RUBBER CLUB.

**T**HE Year Book of The Rubber Club of America for the present year has just been issued by Secretary Vorhis. It is by far the most pretentious piece of literature that the club has yet put out.

It contains about three times as much matter as has hitherto appeared in the modest little annuals of the club, which have been content to give the constitution and by-laws, the board of directors, members of the various committees and the list of the club's membership. This new book—which is 4 x 9½ inches in size and contains 48 pages—in addition to the matter hitherto published in the club's annual book, contains the proceedings of the last annual meeting, held April 21, 1913, the address of President Frederick C. Hood at the annual banquet last January, and a membership list divided under the new classification of firm, active and associate.

The firm members are entered first under an alphabetical arrangement of the names of the firms, and then under an alphabetical arrangement of the names of the representatives of the firms. This list is followed by the roll of active members and that by the list of associate members. At the time of compilation of the membership lists—in July last—there were 60 firm, 208 active, 64 associate and 4 honorary, making a total of 336 members.

The book contains two interesting photographic illustrations,

one of the last annual banquet at the Waldorf and the other of the midsummer outing in July, 1912. The pages devoted to the necrology of the club show that 6 members have died since the compilation of the previous book, viz.: Frank D. Balderston, of The United States Rubber Co., and for some years secretary of the club; S. Lewis Gillette, of The American Rubber Co.; Edward R. Rice, of The United States Rubber Co.; Daniel S. Pratt, of The Foster Rubber Co.; Edward Beecher Kelley, of The Mechanical Fabric Co., and Frederick M. Shepard, of The Good-year Rubber Co.

Every member of the club will find this new Year Book full of interesting and valuable information.

### SOME INTERESTING CORRESPONDENCE ON RUBBER STEALING.

THE correspondence reproduced below, between The Davidson Rubber Co. and Mr. H. S. Vorhis, secretary of the Rubber Club of America—acting for the "Committee on Rubber Stealings"—shows the alertness with which one company is prosecuting these offenders. If other manufacturers would use equal vigilance and all work together for the common good, rubber stealing would soon become a very uncomfortable occupation and be abandoned. It might be added that one of the most active workers in this cause is a very large concern dealing in scrap rubber, and one of the firm members of the Rubber Club.

Boston, September 12, 1913.

RUBBER CLUB OF AMERICA,  
Attention Mr. H. S. Vorhis, Secy.,  
354 Fourth avenue, New York City.

Dear Sir:

In accordance with your letter of July 23, 1913, to our president, Mr. A. M. Paul, it might be of interest to members in this vicinity to note that night press-man in our employ, Martin Kenney, alias Thomas Kennedy, left his post at 2 a. m. this morning, took 60 pounds of raw rubber with the probable intention of taking it to his room near by; was arrested by police on the local beat. In court he was found guilty and fined \$50, and in default of payment he was committed to jail.

We shall investigate this matter further as we desire to discover where this rubber was to be disposed of.

Yours truly,

DAVIDSON RUBBER COMPANY,  
W. D. Yates, Superintendent.

Boston, September 20, 1913.

H. S. VORHIS, Secy.,  
Rubber Club of America,  
New York City.

Dear Sir:

Answering your favor of September 17 regarding Crude Rubber Theft: I have interviewed the man now serving three months sentence because of inability to pay his fine of \$50. I failed to secure any further information.

This particular lot of rubber was found intact and returned to us before he had any chance to dispose of it. In truth, I consider our action was so prompt and decisive that it will tend to prevent any further stealing from our plant.

However, I have had some further intimation that goods could be secured from other plants, but have not been able to secure any definite proof.

Very truly yours,

DAVIDSON RUBBER COMPANY,  
W. D. Yates, Superintendent.

Boston, September 23, 1913.

H. S. VORHIS, Secy.,  
Rubber Club of America,  
354 Fourth avenue, New York City.

Dear Sir:

For your information we are enclosing copy of letter which we have just sent to all consumers of crude rubber in this vicinity.

Yours very truly,

DAVIDSON RUBBER COMPANY,  
W. D. Yates, Superintendent.

(Copy of the Davidson Circular.)

GENTLEMEN:

Will you kindly advise us if John J. Collins is in your employ. He is an experienced rubber pressman, subject to periodical drinking sprees and has been concerned in a theft of rubber. A warrant for his arrest is in the hands of the local police. We can describe him as being smooth face, medium complexion, 35 years old, weighs about 135 pounds, and has a slight Irish accent. If you have any information regarding him, please advise us at once.

We will appreciate your co-operation in this matter as we believe his arrest will probably break up a gang that has been stealing rubber for a considerable period. One of the gang—Martin Kenny (alias Thomas Kennedy), is now serving a three months' sentence.

Yours truly,

(Signed) DAVIDSON RUBBER CO.

### A RESOLUTION REGARDING RUBBER THEFTS.

The following resolution was passed by the Executive Committee of the Rubber Club of America at its regular quarterly meeting held in New York on September 23, 1913:

WHEREAS, Complaint has been made that certain dealers in rubber waste are in the habit of purchasing crude rubber from parties who are neither importers nor brokers, which transactions are undoubtedly of a questionable nature, it is, therefore,

RESOLVED, That the Executive Committee of the Rubber Club of America take the following preliminary action:

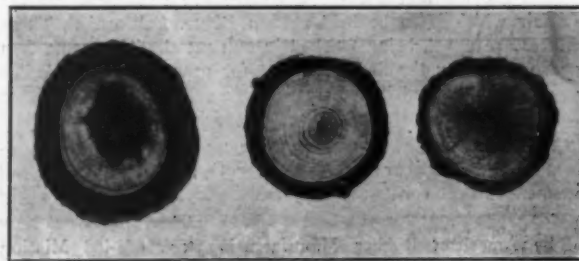
That each dealer in waste rubber be informed of the habit of some rubber waste dealers;

That all be invited to coöperate with the Rubber Club of America in stamping out rubber stealing:

That all agree not to deal in crude rubber and to advise the secretary of the Rubber Club of America, 354 Fourth avenue, New York, for the Rubber Stealings Committee, of any suspicious lots of rubber that come under their observation.

### PROFESSOR LLOYD CORRECTS A COMPOSITOR.

In the August issue of THE INDIA RUBBER WORLD there was a very interesting paper by Professor Francis E. Lloyd of McGill University, Montreal, on the Acclimatization and Cultivation of the Guayule. In illustrating the statement that structural differences in the relative thickness of the cortex or "bark" were attributable to the amount of available water, he used a half-tone cut showing cross sections of guayule grown under three different conditions of dryness. By an error—perhaps pardonable under the circumstances—the compositor inserted the cut upside down, so that the descriptions that came under the two



STEM OF GOOD FIELD  
GUAYULE FROM  
ZACATECAS.

STEM OF GUAYULE  
FROM ISIDRO,  
CHIHUAHUA.

IRRIGATED GUAYULE  
FROM  
ZACATECAS.

[Same amount of wood in each stem.]

sections at the sides of the cut were reversed. The illustration is therefore herewith repeated, with the proper description under each cross section of guayule. This shows the thin bark of the irrigated guayule, the bark of medium thickness on a plant from the semi-arid district of Chihuahua, and the thick growth of bark on guayule in its natural arid habitat.

## THE FIRST RUBBER SHOES MADE IN AMERICA.

WHEN Charles Goodyear secured a patent on his vulcanization process, sixty-nine years ago, he began at once to issue licenses to different manufacturers to use his process in the production of various rubber goods. The first license he issued was one for making rubber footwear, and this went to Leverette Candee, of New Haven, Connecticut. Very soon thereafter, however—that is, within a few months—he issued similar licenses to Ford & Co., of New Brunswick, New Jersey (which later became the Meyer Rubber Co.), to the New Brunswick Rubber Co., of the same place, and to Goodyear's Metallic Rubber Shoe Co., of Naugatuck, Connecticut; and all of these companies began making rubber shoes by the Goodyear process. The licenses included boots also, but rubber boots did not appear on the market until several years later.

Mr. Candee's first attempt to market these Goodyear rubbers was very interesting and rather expensive. Owing to the unfortunate experiences that consumers had had with earlier rubber products—those made before Goodyear's discovery—the whole rubber industry had come into ill repute, the products of the rubber mills growing hard and brittle in winter and melting in hot weather, so that it proved extremely difficult to interest the hard-headed Yankees in these new vulcanized goods.

As a result, the Candee salesman who started out through New England with his rubber shoes found that a great many people were disinclined even to give them inspection; and in order to secure a market the salesman gave away a good many introductory pairs. It was not necessary, however, to do this a second season, because it was soon discovered that the new vulcanized shoes were entirely different from the unvulcanized footwear of a few years before.

Probably not many pairs of the shoes made in 1844—the first year of rubber footwear manufacture in this country or, as far as that is concerned, in any country—are still extant, but through the courtesy of the "Commercial," of Winnipeg, we have secured photographic illustrations of two shoes made in that year by the New Brunswick Rubber Co., the cuts showing both a side and a sole view. These are women's shoes, and it will be noticed that they have no



A RELIC OF 1844.

heels. Women in those days were content to walk on such feet as Heaven had vouchsafed to them, and had not learned to resort to French heels and Cuban heels for the purpose of subtracting from the length of their feet to add to their stature. They wore heelless shoes and, naturally, rubbers to

fit them were also made heelless. Another noticeable feature is the squareness of the toes, pointed toes being at that time not at all in vogue.

Another point of difference from present-day footwear will be noticed in one of the shoes, which has four straps



FOUR STRAP LADY'S SANDAL, 1844.

over the instep. These open-vamp strap sandals were very popular in the earlier days, notwithstanding the fact that it was something of a nuisance to get all these straps on over the leather shoe. To obviate this difficulty and still keep the same effect, a few years later rubbers were made in imitation of the strap style, the vamp being a solid piece with raised lines showing the strap pattern. And for a long time rubber sandals with some sort of pattern stamped in the vamp were exceedingly popular, but they have not been seen now for at least two decades.

The sale of rubber footwear, while it grew continuously from the first year after Goodyear issued his licenses, grew very slowly, for the records show that seventeen years afterwards, in 1861, the entire rubber footwear production of the United States only amounted to 1,250,000 pairs, valued at a trifle over \$750,000. These figures look rather small when contrasted with the present output, which equals about 70,000,000 pairs of rubber boots and shoes a year, with a valuation of almost that many dollars.

## BULLET PROOF TIRES FOR MEXICAN USE.

It is desirable in most parts of the world that automobile tires should be proof against stones, glass, nails and similar destructive objects that may naturally be found in the roadway; but in addition to all these qualities, tires meant for Mexican use ought to be bullet-proof. The publicity promoter of The Firestone Tire & Rubber Co. states that General Lucio Blanco, commanding the constitutionalist forces in Mexico, undoubtedly owes his life to the ability of his tires to withstand the bullets of the federal sharpshooters.

"Through flying bullets," the story runs, "General Blanco drove his Firestone-shod car into the thickest of the recent battle at Matamoros, Mexico. Tires, riddled with bullet holes, and with jagged scars, are mute testimonials that the federals could shoot straight, altho none of their shots penetrated the tough fabric. One large cut especially appears to be made by a glancing ball from a machine gun. The tires certainly proved their worth and quality, for Blanco never stopped. Firestone tires saved him from being taken prisoner."

Other manufacturers desiring to invade the Mexican market will take their cue from the above paragraph and see that their tires are proof against any and all of the projectiles used in modern warfare.

### RUBBER QUARTER-TIPS ON LEATHER HEELS AND SOLES.

THE wonderful increase in the demand for rubber-soled shoes, some account of which appeared in a recent number of *THE INDIA RUBBER WORKER*, and the later development of special applications of rubber portions or insertions in leather shoes for modern dancing,\* seem to have started a sort of epidemic among shoe manufacturers to experiment in other combinations of rubber and leather in their output.

Quite recently it was reported that some shoe manufacturers were making the heels of their shoes with a quarter-tip of rubber,



SOLE AND HEEL OF A COMPOUND OF RUBBER AND LEATHER, WITH RUBBER TIPS VULCANIZED AS SHOWN.

this tip being placed on the outside and back of the heel, the place where probably eighty per cent. of the people wear their heels most. It is claimed that this spot bears the initial impact in walking, and that the quarter-tip therefore serves all the purposes of a full rubber heel lift, while the rest of the heel tread, of leather, prevents the slipping which forms the chief defect of the rubber heel.

The quarter-tip has also another argument in its favor. It is very generally conceded that rubber wears better and longer than leather. If this be granted, it stands to reason that a heel having twice the durability where the most wear comes will probably wear truer and more even than one which is homogeneous throughout its entire tread, thereby overcoming the tendency to run over or run down at the heel.

The quarter-tip is a piece of rubber soling shaped to conform to the curve of the heel. It has a flange which goes under the cut-off top-lift, and this flange assists materially in holding the tip in place under the heavy service required of it. The invention is an English one, and nearly every rubber heel manufacturer in Great Britain, and some Continental makers, include such quarter-tips in their catalogs, and find a large proportional sale. Inquiries of rubber heel manufacturers in this country



THE IRON HEEL PLATE NOW BEING REPLACED BY A RUBBER QUARTER-TIP.



RUBBER QUARTER-TIP MADE IN ENGLAND.

bring the information that such quarter-tips have never come into general demand here, and altho some have been manufactured and offered to the trade, their production has quite generally been discontinued.

The use of the quarter-tip is, perhaps, the logical evolution of the protection of heels, and has been evolved from the metallic heel plate which, while preventing uneven wear, makes a noisy, inelastic tread, and, when worn smooth, is dangerously slippery. It is self-evident that rubber, for the same purpose,

\*See article on Non-Skid Dancing Shoes, *THE INDIA RUBBER WORLD*, August, 1913, page 376.

is far better. To go further in this same direction, some manufacturers are reversing the rubber-leather sole, by a tip of rubber skived to a leather sole, this being designed for those persons who naturally wear the tips of the soles



RUBBER HEEL-TIP MADE IN ENGLAND.

to an excessive degree. Whether this idea is practical remains to be proved, for one of the reasons given for tipping the rubber sole with leather is the difficulty of making a permanent, durable joining of a rubber sole at the toe. A modification of this scheme, and what seems to be an improvement, is shown by a Brockton shoe manufacturer who is using a sole compounded of rubber and leather by a patented process. In order to secure even wear at the points getting hardest service and which are worn away quickest, those parts are reinforced by a different compound, richer in fine East Indian rubber, and molded with the main body of the sole and heel in the vulcanization.

An adaptation of the rubber heel and quarter-tip idea is a half-tip of rubber with an insert of leather, and a rubber heel with a leather center. Both of these are of English origin.

What will be the next adoption of rubber in the manufacture of footwear is certainly an interesting question.

This idea of making the top lift of the heel of a shoe part leather and part rubber, with the rubber at the point of natural contact in walking, is not a new one; it was described in *THE INDIA RUBBER WORLD*, in May, 1909, and attention was called at that time to the difficulty that the shoemakers had in getting the rubber part to take on the same color as the leather. After much experimenting, however, a way was discovered in which this could be done. But while this division of the upper lift of the heel between leather and rubber is not new, there has not been until quite recently any great demand for these shoes. Between the new dances introduced within the last year or two, however, and the growing popularity of various sports, there has arisen quite a general request for shoes partially soled or heeled with rubber.



RUBBER HEEL WITH LEATHER INSERT.

### TWO PRACTICAL USES FOR RUBBER BALLS.

One of the readers of a woman's magazine, who evidently is somewhat given to whitewashing her own ceilings and painting her own walls, describes in a letter for publication a method she has devised for avoiding the unpleasant experience of having whitewash or paint run down the handle of the brush, when working overhead. She buys a large, hollow rubber ball, cuts it in two, punches a hole in the centre of one half, and then pushes this hemisphere over the handle and close up to the brush, with the concave surface opening out. When the brush is used on the ceiling or the upper part of the wall, the paint or whitewash simply runs down into this improvised cup and collects there, from which it can be easily removed after the painting is over.

Another housewife has discovered a useful employment for a rubber ball in the cleaning of lamp chimneys. She takes a hollow ball, fits a stick into it, slits the sides, so that it can be compressed, and then pushes it into the lamp chimney. Naturally, the ball has a tendency to resume its proper shape, so that it swells out and fits snugly against the inside of the chimney. The rubber serves to remove all the dirt and when the chimney is clean it can be easily withdrawn.

## The Obituary Record.

### CAPTAIN FELIX H. HUNICKE.

**W**ORD was received in New York on September 13 of the death by drowning at Colon, Panama, of Captain Felix H. Hunicke, well known to the American rubber trade for his researches in various rubber lands, and particularly because of the fact that he, more than any other American, was



CAPTAIN FELIX H. HUNICKE.

entitled to the distinction of having discovered the available rubber properties of the guayule shrub in Mexico.

Captain Hunicke was born in St. Louis in 1860 and after attending the public schools until the age of eleven, was sent by his father for a two years' course in the German schools. Returning, he graduated from the St. Louis high school and then received an appointment to the Naval Academy at Annapolis, from which he graduated with honors in 1881. After two years' service as a midshipman he resigned from the navy and became associated with his father's business, remaining in this work until the outbreak of the Spanish war in 1898, when he sold his business and volunteered his services to the government. He was made a lieutenant and placed second in command of the United States gunboat "Hist," where he remained during the war. It might be said, in passing, that this gunboat was in more engagements than any of the other boats patrolling the Cuban coast. At the close of the war Captain (then Lieutenant) Hunicke was appointed chief of the revenue cutter service for Cuba, a position which he occupied with exceptional ability for three years. The Federal Government sought still further to retain his services, but he resigned to resume commercial enterprises and very soon directed his attention to the rubber fields.

In 1904 he was sent to Mexico, to make a careful investigation of the possibilities of the guayule shrub, then beginning to attract attention. It was known that guayule contained a considerable percentage of rubber, but it had not been extracted commercially. This was the work that Captain Hunicke with the Lawrence undertook, and it was eminently successful. The first experiments were with crude machinery of his own construction until he was convinced which method was correct. As a result of these experiments, the Continental-Mexican Rubber Co. erected its mill at Torreon and guayule began to come into the American market in commercial quantities—quantities that grew with enormous rapidity up to the time when the revolutionary dis-

turbances in Mexico paralyzed all industries in that republic, including the extraction and shipment of guayule.

The last few years of Captain Hunicke's life have been spent largely in explorations in Central and South America and Africa in behalf of various large rubber interests. He left his home in Roselle, New Jersey, on the 13th of last June for a tour of inspection of certain rubber enterprises of South America. He had with him on this expedition five companions who had served under him on the gunboat "Hist" during the Spanish war.

He is survived by his wife and two sons.

### HENRY P. MOORHOUSE.

The younger men in the American rubber trade will probably have but an indistinct impression of Mr. H. P. Moorhouse, for the greater part of his life was passed in Europe, his visits



HENRY P. MOORHOUSE.

to America being comparatively infrequent during the last two decades; but among the older rubber men he was not only well known but held in very high esteem, and the news of his death—which occurred recently in Paris—will cause them most sincere regret.

Mr. Moorhouse first went to Paris in 1872, to look after the interests of the American heirs of Hiram Hutchinson, Mrs. Moorhouse being one of the heirs. Hiram Hutchinson was a very prominent character in the rubber trade of the earlier days. He was associated with the old New Brunswick Rubber Co. and built the plant of the Newark Rubber Co. In 1853 he went to Paris and started a rubber manufacturing plant within a short distance of that city. He died in 1869, and three years later Mr. Moorhouse went to Paris and became identified with the Hutchinson company, remaining with it until 1883. From that time on he acted as the general continental representative of a number of American manufacturers, among them L. Candee & Co. of New Haven, for whose rubber footwear he became European agent. Later, when that company was merged with the United States Rubber Co., he became the Paris representative of the larger corporation, and continued in that capacity until about ten years ago. He acted as Paris representative of the Philadelphia Rubber Works Co. up to the time of his death.

Mr. Moorhouse was a man of very genial personality and

exceedingly popular in social as well as commercial circles. He was one of the most prominent members of the American business colony in Paris, his hospitality to visiting Americans being proverbial. Tho the last 40 years of his life were spent abroad, with only occasional visits to this country, he remained a staunch American, showing his patriotism by the deep interest he took in his fellow countrymen whom he met abroad. The late Charles L. Johnson, general manager of the United States Rubber Co., married Mr. Moorhouse's daughter in July, 1899.

#### PAUL E. BERTSCH.

Paul E. Bertsch, vice-president and general manager of the Motz Tire & Rubber Co., died on Sunday, September 10, at his home at Akron, Ohio. Mr. Bertsch was thirty-four years old, a veteran of the Spanish-American war, and a member of several prominent local societies and associations. He is survived by his wife and two children.

#### ALLAN W. PAIGE.

Allan W. Paige for many years president of The Derby Rubber Co., of Shelton, Connecticut, passed away after an attack of appendicitis while on a trip recently to the Pacific Coast. He was taken ill on the train, being removed to the Streator Hospital when the train reached Chicago. An operation was immediately performed but was unsuccessful as the disease was too far advanced. He did not rally from the operation.

#### GEORGE PELLINGER, JR.

George Pellinger, Jr., vice-president of the Vulcanized Rubber Co. of New York, died, as a result of an operation, at his home at Hauxhurst Park, Weehawken, New Jersey, on September 10. He was born in Butler, New Jersey, thirty-four years ago and had spent seventeen years or just half of his life in the rubber business, being associated during all that time with the Vulcanized Rubber Co. and its predecessor. His wife died about a year ago. He is survived by two young sons.

#### ROBERT E. J. C. TEALE.

Robert E. J. C. Teale, who was connected with the rubber trade for fifty years, died at his home on Lafayette avenue, Brooklyn, on the 26th of August, from pneumonia, after a short illness.

He was born in Brooklyn on June 1, 1848, received his education in the public schools and in 1863, at the age of 15, entered the employ of the Goodyear India Rubber Glove Co., then located on Broadway, near Fulton street, New York. He was gradually advanced in the service of the company until he became a salesman. In 1885 he resigned and formed a partnership with A. T. Morro, under the name of Teale & Morro. This partnership was dissolved in 1891, but Mr. Teale continued to sell rubber goods, particularly to the carpet and theatrical trade, until 1902, when he entered the employ of the J. W. Buckley Rubber Co., with which he was associated at the time of his death.

Mr. Teale came from an old Brooklyn family, his father being Thomas F. Teale, who published the first directory of that city and who was at one time lieutenant-colonel of the Thirteenth Regiment. Mr. Teale was married in 1877 to Miss Fanny Whitaker, a sister of the well-known Brooklyn artist, John Whitaker, art director of Adelphi Academy. He was a member of the organization known as "Old Brooklynites" and was associated with St. Mary's Episcopal Church. His wife, daughter and three sons survive him.

#### DRY FLOUR AS A RUBBER PRESERVER.

A certain housekeeper with an open and receptive mind has discovered that rubber rings, when they are removed from fruit jars, can be put away in dry flour and are perfectly good for use the next year, remaining soft and pliable. She states that rubber goods can be preserved for years in this way.

#### TREATMENT OF RUBBER SPONGES.

ALTHO the rubber sponge belongs to the more recent products of the rubber industry, and its general introduction has only taken place within the last ten years, it rapidly became recognized as competing with the natural sponge. Not only does this fact indicate a preference for the artificial, as compared with the natural product, but it likewise affords a proof that the rubber sponge fulfils requirements, particularly when properly treated in use.

That, nevertheless, complaints have been heard from consumers, is attributed, in the first place, to the insufficient attention paid to the destructive influence of the soap used. It is generally known that a sponge, even the best unbleached natural variety, is destroyed by the caustic action of many soaps. Rubber sponges in particular, when penetrated by particles of soap, become soft in the course of time, being consequently unpleasant to use. They, moreover, prematurely become smaller and lose their shape.

Commenting on the above facts, a writer in the "Gummi-Zeitung" refers to a proposal which has been made for cautioning purchasers against the use of soap with rubber sponges. It is, however, remarked that such a course would throw suspicion on the rubber sponge and its serviceability, which would not be agreeable to either manufacturers or dealers, the idea being thus conveyed that the article is not a perfect substitute for the natural product.

Of course the durability of a rubber sponge, like that of any other article, cannot be expected to be unlimited. The dealer should, however, inform the public how such durability may be increased. The customer should always be informed that after use the rubber sponge, like the natural kind, should be well washed, in order to prevent its premature destruction by the soap remaining in it. Natural sponges are often cleaned by hot water being poured over them and being allowed to bleach in the sun. This application of hot water, as well as solar heat, is, however, apt to injure rubber sponges, while placing them on heating or radiator pipes will cause them to lose their elasticity and to crumble away. Only with proper treatment can rubber sponges be expected to last. While natural sponges are usually well squeezed out after use and placed in a net for the purpose of drying, it often happens that rubber sponges, while still saturated with soapy water, are carelessly placed on the toilet table in a manner unfavorable to their drying.

It would, however, be a mistake for the rubber goods dealer to urge that soap should not be used with rubber sponges, but their proper treatment should always be recommended and explained. At the same time their many advantages should be pointed out, such as handiness of form, color, uniformity of pores, absorbent properties, softness of material, and advantageous effects on the skin.

What has been said as to rubber sponges for toilet use equally applies to those manufactured for industrial and domestic purposes. In almost every case, it is conceded that they compete with natural sponges, being largely used in stables, in breweries and distilleries (for washing bottles), for window cleaning, etc.

In conclusion, the opinion is expressed that if the recommendations for the proper treatment of rubber sponges are duly followed, a successful future is in store for the article.

#### EXPORTS OF MOTOR CARS TO SOUTH AFRICA.

The United States exported to South Africa in 1912 motor cars to the value of \$720,000, which was nearly three times the value of the exports for the preceding year, but only about one-half of the amount of exports of motor cars to that section from the United Kingdom.

## News of the American Rubber Trade.

### THE NEW OFFICIALS OF THE DERBY RUBBER CO.

**A**T a meeting of the board of directors of The Derby Rubber Co. held at the offices of the company at Shelton, Connecticut, August 22, 1913, John H. Goss, general manager of the Scoville Manufacturing Co., of Waterbury, Connecticut, was elected president and George E. Barber, general manager of the Star Pin Co., of Derby, Connecticut, vice-president, to fill the vacancies caused by the death of the former president, Allan W. Paige, of Bridgeport, and of Charles E. Clark, of Derby.

The board of directors consists of J. H. Goss, G. E. Barber, C. N. Downs, Henry Atwater, H. G. Runkle, T. F. Wood, Jr., and P. B. Price.

The reports of the treasurer and general manager, P. B. Price, were discussed, and in view of the excellent showing made during the past year it was unanimously voted to continue the operation of the mill under the present management.

Mr. J. H. Goss, the new president, is prominent in the brass business, having a vast fund of practical knowledge of manufacturing in all its varied branches, and is also an expert on factory costs and efficiency engineering. Mr. G. E. Barber, the new vice-president, is another man of unusual business and manufacturing ability; and the combined efficiency of Mr. Goss and Mr. Barber will naturally strengthen the operating and cost departments of the mill.

### THE UNITED MALAYSIAN GETS AN AWARD.

The August issue of THE INDIA RUBBER WORLD contained a detailed account of the Universal Exposition held in Ghent, Belgium, in the early part of the summer. An important feature of this exhibition was the "colonial exhibit," in which there was a large display of rubber from Belgian colonies. This rubber department contained over a thousand separate exhibits, and among them one made by the United Malaysian Rubber Co. of New York, London and Singapore, and with plantations in Borneo—which deals in special brands of Malaysian crepe rubber and jelutong, and Malaysian resins. The company recently received a communication from the commissioner general of the exhibition saying that its exhibit had been awarded the Diploma of Honor. In view of the large number of competitive exhibits, the company naturally feels much gratification over this award.

### USES ONLY "SNOW WHITE SEAL."

William H. Scheel, 159 Maiden Lane, New York, importer of superior qualities of oxide of zinc, received a letter recently from one of the large rubber manufacturers saying that he had decided to use "Snow White Seal" exclusively, such had been his success with this brand. In addition to this brand Mr. Scheel handles gradings known as Red, White and Green Seals, which are of particular interest to manufacturers of rubber tires.

### THE BALLOON "GOODYEAR" TO RACE ABROAD.

A fine aerial race is booked for the 12th of October, to start from the Garden of the Tuileries in Paris. Among the competitors which are after the Gordon-Bennett Cup will be the balloon "Goodyear," entered by The Goodyear Tire & Rubber Co., of Akron. This balloon weighs, including basket, net, ropes, and all the rest of its paraphernalia, 1,100 pounds. It is constructed of two-ply cotton rubberized fabric, and it has a capacity of 80,000 cubic feet. It will be piloted by R. H. Upson, of Akron, who has already had quite a little experience and not a little success in operating this same craft. He won the National Elimination Race in Kansas City on the 4th of July last. He left for Europe in August, in order that before the race took place he might visit and inspect the various balloon and aeroplane factories on the continent.

### FIRESTONE EARNINGS.

Reports of the annual meeting of the Firestone Tire & Rubber Co. stockholders indicate for the year ending July 31, 1913, a gain in the gross earnings of the company of \$3,500,000 over those of the previous twelve months and show net profits of \$1,600,000, of which only \$350,000 was disbursed, the balance being carried to surplus. The liabilities of the company are reported at about \$2,000,000, for bills payable, and the assets at approximately \$7,000,000, of which amount \$3,000,000 is represented by merchandise stocks and bills receivable.

### THE PENNSYLVANIA RUBBER CO. ADDS TO PLANT.

With one new four-story addition to its plant just completed and two more new buildings under process of erection, the Pennsylvania Rubber Co. of Jeannette, Pennsylvania, expects by next season to be able to treble its present output. The completed addition contains about 25,000 square feet of floor space, and the buildings now being erected will contain about 190,000 square feet. The factory building is also to be four stories high, of steel and concrete, 193 x 138 feet. The fourth floor will be devoted in part to new offices, two floors to the manufacture of automobile tires, and the rest of the space to the production of other kinds of tires. The building which is to contain the power plant and engine room will be 70 x 130 feet. The equipment of boilers is to be in every way up to date, these to be supplied with automatic stokers, and power to be furnished by turbine-driven electric generators. These two new buildings are to be entirely separate from the present plant.

### THE FAULTLESS RUBBER CO.

At the annual meeting of the Faultless Rubber Co., held at the company's offices at Ashland, Ohio, on July 25, plans were considered for the erection of additional factory buildings; and since that time quite an extensive tract of land has been purchased for this purpose. The company now contemplates the erection of one brick and concrete factory building, 60 x 180 feet, two stories high, work on which will be started early in the spring. The new building will be used for general manufacturing purposes and is to contain the calender room. The officers elected at the annual meeting were: T. W. Miller, president and treasurer; P. A. Myers, vice-president; I. L. Miller, secretary, and C. E. Campbell, general manager; and these, with Mr. F. E. Myers, constitute the board of directors.

### NASSAU TIRES IN A GRUELING TEST.

The Thermoid Rubber Co., of Trenton, New Jersey, takes a great deal of satisfaction in the record of its Nassau tires in the Elgin Road Race of August 30. These tires were used on a car driven by Ralph De Palma, which went over the entire course of 302 miles at the rate of 71½ miles per hour. After the race he telegraphed the company as follows: "Three Nassau tires went through entire Elgin Road Race. Only changed one on account of puncture. Am thoroughly pleased with showing. Will use same tires again at Corona September ninth."

They were also used on a car driven by "Bob" Burman, who did 160 miles of the course at a terrific rate of speed without changing a single tire. The company asserts that these were not special tires made for racing but tires taken out of regular stock.

### LARGE INCREASE IN SALES OF U. S. TIRES.

The United States Tire Co.'s business for the first eight months of the present year shows an increase in net sales of 28.7 per cent. over the same period in 1912. The earnings of the Rubber Goods Manufacturing Co. show a substantial increase over last year, tho it is impossible at this time to tell the exact amount of this increase as the company's year does not end until the 31st of December.

## THE HARTFORD COMPANY'S FINE NEW POWER PLANT.

The Hartford Rubber Works Co., Hartford, Connecticut, recently completed one of the best equipped power plants probably to be found anywhere in the United States. The accompanying illustration shows this new plant, together with the old plant, which stands immediately in front of it, with the square chimney. The growth of the company's business during the last few years has necessitated an increase in its power capacity, and one boiler after another was added to the equipment until for economical operation it was found to be desirable to abandon the old plant entirely and substitute for it an altogether new plant. This new power house, built of reinforced concrete, has a frontage of 110 feet and is located on a private siding of the N. Y., N. H. & H. R. R. It is a most interesting illustration of the amount of work that can be done automatically in such a plant, as will be shown by the following description:

The coal cars are run over weighing scales, and the bottom of the car opens over the hopper in the track which drops the coal immediately into a crusher where the large lumps



PLANT OF HARTFORD RUBBER WORKS CO.

are reduced to uniform size, and passed on over a conveyor to the overhead coal bin which holds 1,500 tons. The coal is distributed equally in the bins, which are situated over the bunkers of the Murphy automatic stokers. The traveling weighing feeder takes the coal from the overhead bin, automatically weighs it as it feeds to bunker over the stokers, which automatically feed the fire.

These Murphy stokers are attached to the Bigelow-Hornsby vertical tubular boilers, of which there are two units of 1,000 horsepower each. They are so located in the boiler house as to be accessible from all four sides and are in a room 72 feet high. The west side of this room is entirely of glass and topped with glass ventilators, so that the room where the boilers are fired is one of the most comfortable in the entire plant.

The ashes are automatically dropped from under the stokers and conveyed to an overhead ash bin, and the wagons which take the ashes away are automatically filled by raising a single lever. The boiler plant is equipped with all of the latest recording devices for flow of steam meters, C20 recorders, and draft recorders, which automatically make a daily report of the amount of water evaporated and the amount of steam transmitted to each department, and also the amount of coal used in its production.

Should be on every rubber man's desk—Crude Rubber and Compounding Ingredients; Rubber Country of the Amazon; Rubber Trade Directory of the World.

## TRADE NEWS NOTES.

Electric power is to replace, to some extent, the steam power heretofore employed at the Fisk Rubber Co. plant at Chicopee Falls, Massachusetts. The work of substitution is now in progress and when completed will permit of the use of from 2,000 to 3,000 h. p., the current to be supplied by the Amherst Power Co.

Another link has been added to the chain of "Crocker System" stores—of which there are now eleven in New England—by the opening at Fitchburg, Massachusetts, of a store in the Bassett building on Main street. This enterprise will be conducted under the management of Mr. George I. Crocker, and will be known as The Fitchburg Rubber Co.

An award has been made for certain of the work connected with the erection of a new three-story, 60 x 130 foot factory at Naugatuck, Connecticut, for occupancy by The Rubber Regenerating Co.

Two new factory buildings are being added to the plant of The Gordon Rubber Co. at Beach City, Ohio—these to be 40 x 50 and 40 x 200 feet respectively, one story high and of brick construction.

The Faultless Rubber Co., of Ashland, Ohio, is soon to extend its factory space and equipment, having purchased for that purpose a site adjoining its present location.

The Chester Rubber Tire & Tube Co., incorporated at Charleston, West Virginia, is now negotiating the sale of its stock, and when the necessary \$25,000 worth has been disposed of the company is expected to locate in Chester, Ohio, using for its plant the building at Ninth street and Carolina avenue now occupied as a car barn and machine shop. It is reported that about 200 shares of common stock have been sold, \$15,000 subscribed and \$5,000 more promised. The officers of the company are: John E. Newell, president; George Arner, vice-president; George Hasson, secretary, and A. L. Skinner, treasurer.

The large increase in the business of the Elwell Rubber Co. recently has led to the installation of additional machinery in its plant at Stoughton, Massachusetts, the former factory of the Plymouth Rubber Co.

The firm of George E. Goble & Co. has recently been formed at Detroit, Michigan, with headquarters at 680 Woodward avenue, where it will represent the Lee Tire & Rubber Co. and the Victor Rubber Co., in addition to handling the business in that city of some of the carriage equipment concerns.

The Hall Rubber Co., at 1402 Ridge avenue, Philadelphia, has been appointed to the agency for Motz tires in Pennsylvania, Maryland and Delaware. A service department for Motz tire users is also to be established, under control of the Hall Rubber Co. and personally superintended by W. M. Stubbs, former manager of the Motz company's branch in Philadelphia.

Messrs. Buist & Siegrist, located at 633 North Broad street, Philadelphia, have taken the agency for Falls Rubber Co. tires, and have organized a sales force to cover the territory granted them, which extends from New York to Florida.

A lease of the building situated at 240 West Fifty-sixth street, New York, has been taken by the Empire Rubber & Tire Co., for a term of years.

The J. H. Stedman Co. has sent out an announcement to the trade that it has moved its business to South Braintree, Massachusetts, where it has a plant on the Fall River division of the N. Y., N. H. & H. R. R. It will, however, maintain a Boston office at 176 Federal street.

The winner of the 250-mile race at Corona, California, on September 9, where a speed of 74½ miles per hour was maintained, drove a car equipped with Firestone tires.

## NEW INCORPORATIONS.

Anglo-American Rubber Corporation, September 15, 1913; under the laws of New York; authorized capital, \$75,000. Incorporators: Robert F. Rubens, Frederick B. Daniels and George L. Fox, Jr.—all of 583 Fourth street, Brooklyn, New York. To manufacture and deal in rubber goods.

Auto & Tire Sales Co., August 22, 1913; under the laws of Delaware; authorized capital, \$100,000. Incorporators: F. D. Buck, George W. Dillman and B. M. Grawl—all of Wilmington, Delaware. The corporation is authorized to manufacture, sell and deal in automobiles and all parts and accessories thereof, and to carry on any trade or business connected therewith.

Blodgett Rubber Co., August 20, 1913; under the laws of Delaware; authorized capital, \$150,000. Incorporators: Herbert E. Latter, Norman P. Coffin and Oscar J. Reichard—all of Wilmington, Delaware.

Blumenthal-Prager Tire & Rubber Co., August 13, 1913; under the laws of Michigan; authorized capital, \$1,000. Incorporators: Louis H. Prager, George D. Blumenthal, Celia Blumenthal and David Blumenthal—all of Detroit, Michigan. General repairing and vulcanizing business and to deal in rubber goods and automobile accessories.

The Bowling Green Rubber Co., September 3, 1913; under the laws of Ohio; authorized capital, \$25,000. Incorporators: Charles W. Greene, Cecelia P. Cope, Mont Clouse, M. L. Cope and Loren Campbell. Location of principal office, Bowling Green, Ohio. The manufacture of rubber tires, automobile tire supplies and accessories and all rubber goods.

The Clingfast Rubber Heel Co., August 22, 1913; under the laws of Massachusetts; authorized capital, \$200,000. Incorporators: Essex S. Abbott, Charles H. Gassett—both of Hotel Curtis, Melrose, Massachusetts, and Arthur E. Wilson, 418 Medford street, Somerville, Massachusetts. The manufacture of rubber heels and all other articles of rubber.

The Columbia Tire Association Co., September 5, 1913; under the laws of Ohio; authorized capital, \$10,000. Incorporators: E. L. Henderson, Thomas Mackiernan, Harold Mackiernan, A. E. Albright and R. E. Henderson. Buying and selling automobile tires, automobile accessories, rubber goods of all kinds, druggists' sundries, mechanical rubber, etc.

E. A. Corwin Co., August 22, 1913; under the laws of Vermont; authorized capital, \$10,000. Incorporators: Ernest A. Corwin, Jessie G. Corwin, Harold E. Corwin—all of Chelsea, Vermont. To buy and sell rubber articles, etc.

The J. P. Gordon Co., August 20, 1913; under the laws of Ohio; authorized capital, \$500,000. Incorporators: John P. Gordon, Alois F. Hegelheimer, Irvin E. Persig, Frederick C. Brock and Arthur F. Reinhard. Location of principal office, Columbus, Ohio.

The Goodyear Rubber Co., August 28, 1913; under the laws of Wisconsin; authorized capital, \$500,000. Incorporators: Frederick M. Shepard, Frederick M. Shepard, Jr., and Newell C. Shepard—all of 787 Broadway, New York. Manufacturing and dealing in india rubber and gutta percha goods and other merchandise.

The McGraw Tire & Rubber Co., April 8, 1913; under the laws of Ohio; authorized capital, \$1,000,000. Incorporators: E. C. McGraw, James Chaplin, C. H. Bolton, John S. Wilson, R. F. Taggart and L. M. Keyes—all of East Palestine, Ohio. The corporation is organized for the purpose of manufacturing and dealing in rubber tires, rubber goods, automobile and motor vehicle accessories, etc.

Motor Tire Sales Co., July 17, 1913; under the laws of Illinois; authorized capital, \$2,500. Incorporators: F. Hutchinson, Emma Roesing and Alice S. Dwyer—all of Chicago, Illinois.

National Rubber Realty Co., August 22, 1913; under the laws of Pennsylvania; authorized capital, \$5,000. Incorporators: Joseph E. Cotter, 2034 Ritner street, Philadelphia; C. U. Martin, 5837 Chester avenue, Philadelphia, and F. S. Garman, 318 Cooper street, Camden, New Jersey. Location of principal office, Pottstown, Pennsylvania. To purchase, sell, exchange, hold, mortgage, improve, lease and let real estate.

The National Tire & Rubber Co., August 30, 1913; under the laws of Ohio; authorized capital, \$150,000. Incorporators: C. J. Davis, R. T. Taggart, William Smith, A. E. Albright and John Kennedy Ewing, Jr. Manufacturing, buying, selling and dealing in rubber tires, rubber goods, etc.

The Nemo Chemical & Specialty Manufacturing Co., August 15, 1913; under the laws of Illinois; authorized capital, \$2,500. Incorporators: Conrad E. Niehoff, Henry A. Gano and John T. Whitehead. To manufacture, sell, buy and merchandise rubber products, etc.

New England Raincoat Co., September 3, 1913; under the laws of New York; authorized capital, \$3,000. Incorporators: Philip Braslow, 539 East 171st street; Meyer Selsman, 447 Wendover avenue, and Solomon Frummer, 8815 Bay 15th street—all of New York. To manufacture and sell raincoats, etc.

Nicholas Tire and Rubber Co., September 9, 1913; under the laws of New York; authorized capital, \$5,000. Incorporators: James C. Nichols, 67 Franklin avenue, New Rochelle, New York; William B. Hughes, 879 West End avenue, New York, and David L. Fultz, 2112 Beverly road, Brooklyn, New York. To manufacture tires, etc.

The Peerless Co., September 9, 1913; under the laws of New Jersey; authorized capital, \$25,000. Incorporators: John Green, Eugene H. Sadler and Jacob F. Meyer—all of Newark, New Jersey. The manufacture of raincoats.

Punctura Inc., July 11, 1913; under the laws of California; authorized capital, \$200,000. Incorporators: Albert Maurice Lambert, Konrad Kather, G. A. Weihe, Eric J. Rosenstirn and John D. Griffin—all of San Francisco, California. To manufacture the articles known as "Punctura" and to do other business in the rubber goods line.

Rolle Rubber Co., September 10, 1913; under the laws of New York; authorized capital, \$5,000. Incorporators: Edward F. Rolle, 108 West Forty-third street; Adele Olsen, 1094 Woodycrest avenue—both of New York, and Richard J. Thomas, 208 Hudson street, Hoboken, New Jersey.

Rutherford Rubber Co., January 16, 1908; under the laws of New Jersey; authorized capital, \$300,000. Incorporators: H. O. Coughlan, L. H. Guenther and John R. Turner—all of 15 Exchange place, Jersey City, New Jersey. The manufacture and sale of rubber tires for vehicles, etc.

The Sanitary Rubber Co., September 4, 1913; under the laws of Ohio; authorized capital, \$50,000. Incorporators: John J. Lisbae, Elizabeth Lisbae, Lester King, Clarence G. Noegling and Frederick W. Crankshaw. Manufacturing and dealing in all kinds of goods and articles made by using rubber therein.

South Side Tire Co., September 8, 1913; under the laws of Illinois; authorized capital, \$10,000. Incorporators: L. A. Cohen, E. A. Linderholm and John W. Bissell. Place of business, 61 East Garfield Boulevard, Chicago, Illinois.

Stodder Tire & Rubber Co., August 19, 1913; under the laws of California; authorized capital, \$100,000. Incorporators: Lee Stodder, W. Macnider and Stewart A. Stodder—all of Los Angeles, California.

Taunton Rubber Co., August 25, 1913; under the laws of Massachusetts; authorized capital, \$30,000. Incorporators:

Albert A. Ormsbee, 4½ Silver street; Charles S. McCall, 19 Charles street; George Greene, 42 Kilton street; Henry G. Crapo, 8 Crapo street, and Frank E. Wellman, 38 East Walnut street—all of Taunton, Massachusetts. Manufacturing and dealing in rubber and leather heels, etc.

Texas Guayule Co., September 19, 1913; under the laws of New York; authorized capital, \$10,000. Incorporators: Salvador Madero, Ernest Madero—both of 115 Broadway, New York, and Nathan A. Smyth, 60 Broadway, New York.

Tire Buyers, Inc., August 9, 1913; under the laws of Maine; authorized capital, \$600,000. Incorporators: Henry Hudson, James H. Hudson, Otis Martin, Frank Martin, A. W. Drake and C. S. Bennett—all of Guilford, Maine. To buy, sell, import, export, manufacture and generally deal in automobile tires, casings, tubes, etc.

Unsinkable Bathing Boat Co., September 18, 1913; under the laws of New York; authorized capital, \$50,000. Incorporators: Margaret J. Johns, Thomas L. Zimmerman, Jr., and Arthur Johns—all of 60 Wall street, New York. Manufacturers of unsinkable boats, rubber goods, etc.

#### RUBBER COMPANY DIVIDENDS.

The Rubber Goods Manufacturing Co. paid on September 15 a regular quarterly dividend of 1¾ per cent. on its preferred stock and a 2 per cent. dividend on its common stock. Three months ago its common dividend was 1 per cent. and six months ago it was 6 per cent.

The Canadian Consolidated Rubber Co., Ltd., has declared a regular quarterly dividend of 1¾ per cent. on its preferred and of 1 per cent. on its common stocks, payable October 1 to stockholders of record on September 20.

The Intercontinental Rubber Co. paid on September 30 a regular quarterly dividend of 1¾ per cent. on its preferred stock of September 20 record.

The B. & R. Rubber Co. has declared a regular quarterly dividend of 1¾ per cent. on its preferred stock and a dividend of 2 per cent. on its common stock—payable October 1 to stockholders of record on September 22.

#### CHANGE OF NAME

The corporation hitherto known as C. Roberts Rubber Co. changed its name on September 20 last to Eberhard Faber Rubber Co., the officers of the company remaining the same as heretofore. The business of the concern will continue in every respect as formerly, with the one exception of the change of name.

#### FOREIGN TRADE OPPORTUNITIES.

A resident of a Latin-American country informs an American consulate that he desires estimates, quoted in United States gold, f. o. b. New York, covering machinery for a plant to manufacture steel, aluminum and rubber horseshoes. He has a customer who is prepared to pay cash as soon as the plant is in running order, and will deposit the money with a bank or importing house in advance, with the understanding that it is to be paid over when the plant is completed. The number of the consular report is 11,699.

#### AMERICAN LAMPBLACK WANTED.

An American consular report states that a well-known firm abroad, dealing in crude drugs and chemicals, wishes to get into connection with American producers of lampblack and gasblack, as well as of technical and pharmaceutical specialties. Replies should be addressed to No. 11519, Bureau of Foreign and Domestic Commerce, Washington, D. C.

Should be on every rubber man's desk—Crude Rubber and Compounding Ingredients; Rubber Country of the Amazon; Rubber Trade Directory of the World.

#### TWO POPULAR CRUDE RUBBER MEN.

Mr. Xavier W. Obalski and Mr. Edward C. Sweeney, Jr., whose photographs are here reproduced, represent De Lagotellerie, the French crude rubber house, in this country and have offices at 24 and 26 Stone street. Mr. Xavier W. Obalski



XAVIER W. OBALSKI.

was born in Nantes, France, in 1880. He spent the early part of his life in Pará and Manaós, later completing his education and military service in France. After three years' business training in the service of the De Lagotellerie houses in Nantes and London—his father at that time being one of its heads—he came to America in 1906 and became associated with Mr. C. P. dos Santos, the former agent for Denis Crouan Fils, who was the pre-

decessor to the present firm of De Lagotellerie, of New York and Paris.

Mr. Edward C. Sweeney, Jr., was born in St. Pierre, Miquelon, in 1883. He came to America in 1899—after completing his education in St. Pierre—and entered the service of the French Telegraph & Cable Co. in New York—of which his father is general manager. In 1903 he entered the service of the International Banking Corporation, an institution with branches in the Far East and Central America. In 1910 Mr. Sweeney started in the importing and exporting business on his own account, later joining forces with Mr. Obalski. These gentlemen are of most attractive personality and very popular with their associates in the trade.



EDWARD C. SWEENEY, JR.

#### A PNEUMATIC PLUG FOR PNEUMATIC TIRES.

A great variety of repair appliances for pneumatic tire punctures has been devised, but here is rather a new one, which comes from the State of Washington. It consists of a plug with a hollow base which is inserted through the puncture and then inflated, so that it is bound to be an air tight fit no matter how large the puncture is.

## PERSONAL MENTION.

Mr. William A. De Long, who has devoted most of his time during the last two months to adjusting the affairs of the New York Commercial Co., sailed for England on the "Lusitania" on September 3, to be gone six or seven weeks on business in connection with the settlement of the company's affairs.

Mr. Beach L. McClaren, formerly connected with the United States Rubber Co., and for the past year vice-president and general sales manager of the Racine Rubber Co., has recently been elected president and general manager of the Mitchell-Lewis Motor Co., a corporation of Racine, Wisconsin, with a capital stock of \$10,000,000.

Mr. John L. Hamilton has been appointed manager of the Boston branch of The Endurance Tire & Rubber Co., of New York City, from which point the New England trade is to be supplied.

Mr. Edward J. McCaffrey is to act as manager of the Federal Rubber Co.'s business at Philadelphia.

Mr. George Benninger, who claims the record for the number of tires mounted in one day, with 310 to his credit, has been connected for the past five years with one of the Studebaker plants in Detroit, as foreman of the repair department, and during that time is said to have mounted a quarter of a million automobile tires.

Mr. E. F. Holliday has assumed the management of the Chicago Tire & Supply Co., located at 2129 Michigan avenue, Chicago, coming to this position from a previous connection with the Federal Rubber Mfg. Co.

Mr. Stafford H. Pratt, lately graduated from the rubber school of the Northern Polytechnic Institute, Holloway, London, recently arrived in America with the expectation of associating himself with one of the large rubber manufacturing plants. He will probably locate in the west.

Mr. Anton Berg returned to New York on September 16 from Christiania, Norway, where he has been passing the last two months. The August issue of this paper made mention of the work that Mr. Berg has been doing in Akron during the last two years in the installing of machinery for making balata belting and packing—in which line he is a recognized authority. He returns with the expectation of continuing this work in other parts of the country. His address is care the Norwegian Consulate General, New York City.

Mr. George B. Hodgman, president of The Hodgman Rubber Co., and also president of The Rubber Club of America, has been chosen as a delegate to represent the club at the Fourth International Rubber Exposition to be held in London next July.

Mr. E. H. Cutler, known to a great many rubber men because of his former connection with the industry, is now acting as agent for The Scribner Music Club, New York.

## A VALIANT CHAMPION OF GOOD ROADS.

The cause of good roads finds a valiant champion in F. A. Seiberling, president of The Goodyear Tire & Rubber Co., of Akron. Mr. Seiberling states it as his belief that if every state would set aside one or two days each year for this cause, and if the citizens would contribute liberally, splendid results might be achieved, of benefit not only to those who use the roads for pleasure automobiling, but to suburbanites generally and to the farmer in particular, affording him better and correspondingly quicker marketing routes.

## THERMOID RUBBER BUMPERS.

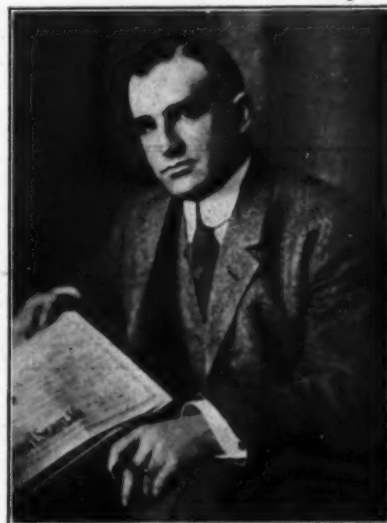
The Thermoid Rubber Co., of Trenton, N. J., makes a great variety of rubber bumpers for motor cars. They are made in any width, to fit the different width of springs, and in any shape that may be desired; and in order to fit the different economic tastes and pocketbooks, they are made in five different grades, ranging from a high-priced bumper to one of extremely low price, the quality naturally varying with the price charged.

## GEORGE B. DRYDEN.

This is an excellent likeness of George B. Dryden, president of the Dryden Hoof Pad Co., making a general line of molded specialties, with offices and factory at 1014 South Forty-third avenue, Chicago, Illinois.

Mr. Dryden started in the rubber business in February, 1897, as salesman for Kelly, Maus & Co., at Chicago, who had the agencies of a number of standard tire concerns.

In 1898 Mr. Dryden, in conjunction with H. S. Firestone, formed the Imperial Rubber Tire Co., taking over the rubber tire business of Kelly, Maus & Co., and was the secretary and treasurer of that organization until it was acquired—two years later—by the Rubber Wheel Co., later known as the Consolidated Rubber Tire Co., which concern Mr. Dryden represented as Chicago manager for several years. Subsequently he acquired this business, which he operated under the name of the Dryden Rubber Tire Co. In 1901, the Dryden Hoof Pad Co. was formed as a selling organization, and eight years later it developed into a manufacturing business; and last year saw the organization of the Peerless Rubber Horse Shoe Co. At the present time, Mr. Dryden is president of the Dryden Rubber Co., president and treasurer of the Dryden Hoof Pad Co., treasurer of the Peerless Rubber Horse Shoe Co., and is recognized as an aggressive and efficient member of the western rubber trade. Personally, he is courteous and exceedingly companionable, having a host of friends throughout the trade.



GEORGE B. DRYDEN.

## MR. L. P. DESTRIKATS GOES ABROAD.

Mr. L. P. Destribats, vice-president of the Ajax-Grieb Rubber Co., sailed Wednesday, September 10, on the "La France" for France, where he expects to spend a vacation of about two months. Altho Mr. Destribats was born in France, this is his first visit to that country since he left twenty years ago. He has been connected with the Ajax-Grieb company since its formation in 1905.

## MR. BACON BECOMES A PUBLIC ACCOUNTANT.

Mr. Oliver Bacon, who was connected with Geo. A. Alden & Co. for more than twenty years—for the last ten years of that time acting as chief accountant and general auditor—has opened an office as a public accountant at 220 Devonshire street, Boston. If there is any virtue in experience, Mr. Bacon, after his twenty years of acquaintance with rubber accounts, ought to be particularly well qualified to do this sort of work for anybody in the rubber trade.

## A HEEL WITH TWO KINDS OF RESILIENCY.

S. L. Kelly, of Grand Junction, Colorado, has taken out a patent for a heel-seat to be used on a shoe with a leather heel, consisting of a rubber cushion between two aluminum plates, the peculiarity of the cushion being that it contains three holes in which are inserted coiled springs, the spring co-operating with the rubber to relieve the jar in walking.

**PROOFERS AND RUBBERIZERS FORM AN ASSOCIATION.**

The August issue of THE INDIA RUBBER WORLD contained a letter from a proofer who has had some rather unhappy experiences with certain garment manufacturers, who, according to his statement, often made claims on the proofers for the full value—and more than the full value—of manufactured goods, on the ground that the proofing had been defective, when as a matter of fact the defect arose either from poor workmanship in their own factories or from improper storing of goods, or from other causes for which the manufacturers were solely responsible.

To meet this and similar situations, and for general mutual benefit, the rubberizers and proofers have formed an association, known as the Raincoat-Cloth Merchants Association, with offices at 149 Broadway, New York. Mr. J. G. Maier is the manager of the association, and Albert & Albert are the counsel.

**MEETING OF THE NATIONAL ASSOCIATION OF COTTON MANUFACTURERS.**

The semi-annual meeting of the National Association of Cotton Manufacturers was opened on September 30 at the Chalfonte, Atlantic City, New Jersey. The address of welcome was given by Mayor Riddle of that city. The session will continue through the first two days of October.

**AN ADDITION TO THE WOONSOCKET MILL.**

The Alice mill of the Woonsocket Rubber Co., where the company's shoes are made—and which is situated in Woonsocket, Rhode Island—has for many years been known as one of the largest footwear plants in the United States, its main building being 70 feet wide by 420 feet long, with two ells 60 feet wide and 140 feet long. But even this great structure was evidently not sufficient for its requirements, as it now has in course of erection a large addition, 56 x 80 feet, four stories high and basement, made of brick-faced steel construction. This is located at the northwest corner of the present main building. A noticeable feature of this new addition is its tremendous window area, which will flood every working room with light.

**AN AUTO. CLUB'S FINE BUILDING.**

A location on Eastern Parkway, Brooklyn, opposite the Museum of Arts and Sciences and very near the main entrance to Prospect Park, has been chosen as the site of the new home of the Long Island Automobile Club; and if the proposed plans are successfully carried out the clubhouse should do credit to this fine section of city, the intention being to erect an \$85,000 building, three stories high and equipped with dining and grill rooms, billiard parlors and all modern features. The grounds of the club extend through the block from Eastern Parkway to Lincoln place, and members will enjoy the privileges of the machine shop and garage which are also included in the building plans.

**NO CUT IN TIRE PRICES IMMINENT.**

Some of the daily papers have published a paragraph to the effect that the larger tire companies have quite a stock of crude rubber, bought at considerably higher prices than those prevailing at the present time, and that in consequence their profits have been reduced to a paltry 7 or 8 per cent., while the smaller companies, never having capital enough to buy rubber ahead, and buying from day to day, are using the low-priced rubber now being offered, and by reason of this rubber economy are able to make 15 or 16 per cent. at present tire prices. The writer goes on to say that the larger companies are tired of holding the umbrella over their small brothers and that they contemplate a radical reduction in tire prices for the purpose of shaking out the little fellows. Inquiry among the big makers of tires fails, however, to substantiate this report, and there seems to be no immediate prospect of a reduction in the current price of tires.

**THE ASKAM RUBBER CO.**

The Askam Rubber Co., whose incorporation was mentioned in the August issue of this paper, is building a plant in the town of Milford, Connecticut, on the Wopopaug river. The main building is to be 60 x 175 feet, and one-story high, with an additional building 50 x 75 feet for laboratory work and particularly for the chemical treatment of stock. The product of the mill will be high-grade reclaimed rubber (which will be known as the "Arco grade") from automobile tires, and the plant at the beginning is to have a capacity of 4 tons a day. The mill will be under the personal charge of W. F. Askam, the president and general manager.

**RUBBER STAMP MAKERS MERGE.**

The plant of H. C. Dimond & Co. has been sold to the Union Stamp Works, Boston, Massachusetts, and the combined business of the two concerns will hereafter be carried on under the name of The Dimond-Union Stamp Works, with offices and factory at 175 Washington street, that city. The Dimond company was established in 1875 and was the oldest stamp house in New England, as the new company is said now to be the largest.

**THE THREE OLDEST MAKERS OF RUBBER STAMPS.**

Among those who attended the Stamp Makers' Convention recently held in Minneapolis were J. E. Taylor of Cleveland, Ohio; Chas. Everson, of Everson & Reed, New York City, and L. E. Scotford, president of the Superior Type Co., Chicago, Illinois—all prominent not only in convention matters but in the stamp trade generally, and famous as being the three oldest stamp manufacturers, in point of their connection with the trade, in the United States, the same having covered periods of 42, 39 and 37 years respectively.

**STAGGERED TREAD?**

This highly artistic and thoroughly illuminating picture is taken from the columns of "Life" where it has the following sub-line: "What we pedestrians need is the non-skid banana peel." That is undoubtedly quite true, but would not anyone who analyzed this picture carefully be justified in saying that this particular pedestrian was equipped with the famous "Staggered Tread"?

**WOVEN STEEL HOSE & RUBBER CO. ADDS TO PLANT.**

Extensive additions to the plant of the Woven Steel Hose & Rubber Co., of Trenton, New Jersey, have been contracted for, and land adjoining the present site has been purchased, more than equaling in area that formerly occupied by the company. A number of patented machines have recently been installed for the production of its "Protector" brand of Woven Steel Pneumatic Tool Hose. An officer of the company, however, is authority for the statement that its greatest expansion has been in automobile brake lining and friction clutch rings, as well as for the information that 5,000 locomotives are now equipped with its squirt hose. The new building, for which contracts have been let, is to be 60 x 130 feet, two stories high, of concrete, brick and steel, and is to contain, besides offices, the receiving and shipping departments.

**REPORT OF THE ASBESTOS CORPORATION OF CANADA, LTD.**

The first annual report of the Asbestos Corporation of Canada, Ltd., which in June, 1912, took over the old Amalgamated Asbestos Corporation, Ltd., shows for the seven months ending December 31, 1912, net earnings to the amount of \$150,304, leaving a surplus of \$68,082 after deducting bond interest amounting to \$82,222. The directors' report speaks of these earnings as "fairly satisfactory in view of the conditions that obtained prior to the beginning of operations by the company." The company at the time of the report was operating three plants—the Kings and Beaver properties at Thetford Mines, and the British Canadian property at Black Lake. The summarized balance sheet is given below:

ASSETS.	
Plant .....	\$9,112,012
Bonds, treasury .....	25,000
Asbestos, etc. ....	404,208
Bills receivable .....	129,536
Cash .....	490,479
Insurance, etc. ....	8,648
<b>Total .....</b>	<b>\$10,169,883</b>
LIABILITIES.	
Bonds .....	\$3,000,000
Preferred stock .....	4,000,000
Common stock .....	3,000,000
Accounts payable .....	71,210
Accrued liabilities .....	5,590
Other liabilities .....	25,000
Surplus .....	68,083
<b>Total .....</b>	<b>\$10,169,883</b>

**A NEW ASBESTOS PLANT IN MARYLAND.**

A company has just been organized known as the Baltimore Roofing and Asbestos Manufacturing Co., to erect a plant at Finksburg, Maryland, for the manufacture of various asbestos articles, including roofing and table cloths. The company has been capitalized at \$350,000, and includes business men of Baltimore, and Winchester, Maryland, and York, Pennsylvania. The plant will be under the management of O. R. Emigh, who was for some years general superintendent of the Central Roofing Mfg. Co., at East St. Louis, Illinois.

**CLEANING METAL WITH A RUBBER ERASER.**

A new use has been discovered for the ordinary rubber ink eraser, viz., the removal of tarnish from metal. It has been found that, except for very fine surfaces, where the grit in the rubber is liable to make slight scratches, the eraser is quite effective in restoring polish to soiled and discolored metals.

Should be on every rubber man's desk—The Rubber Trade Directory of the World, 1912.

**TRADE NEWS NOTES.**

The tire selling agency of The Hood Rubber Co., at Hartford, Connecticut, is now located at 30 Mulberry street, where a steam vulcanizing plant has been installed.

A Philadelphia branch has been established by the Pennsylvania Rubber Co. of Jeannette, Pennsylvania, at 651 North Broad street.

The Bowling Green Rubber Co., recently organized, and capitalized at \$25,000, will locate its plant at Bowling Green, Ohio, where it will manufacture, in addition to various rubber specialties, a line of rubber tire accessories.

Notice of dissolution has been filed at Madison, Wisconsin, by the Diamond Rubber Co. of New York, whose branch at Milwaukee was discontinued at the time that this company merged with the Goodrich.

The Motz Tire & Rubber Co. will hereafter be represented in Boston by The Columbia Tire & Top Co., of which Mr. R. J. Brine is manager.

The Syracuse Rubber Co. of Syracuse New York, has added to its sales force and also to its floor space, having recently leased a five-story building adjoining its present location, with the intention of utilizing both premises.

The agency for Miller tires in Cincinnati, Ohio, is now vested in The Miami Vulcanizing Co.

The Auto & Tire Sales Co. has been incorporated, with office at Wilmington, Delaware, to deal in auto accessories as well as automobiles. It has a capital stock of \$100,000, and the incorporators are: E. D. Buck, G. W. Dillman and B. M. Grawl.

The Pennsylvania Rubber Co. of New York—a branch of the Jeannette, Pennsylvania, company of the same name—will soon open New York headquarters at Broadway and Sixty-third street. The main floor of the building at that location has been leased for this purpose and is now undergoing the necessary alterations.

The name "Motobestos" as applied to motor car brake band-lining and other asbestos-copper wire fabrics was allowed by the examiner of patents to The Asbestos & Rubber Works of America, after two years' litigation with the American Asbestos Co. over this trade mark as against the name "Motorbestos."

The Lee Tire & Rubber Co. of Conshohocken, Pennsylvania, is to open a department in New York City, at 1966 Broadway, to supply both the wholesale and retail trades of the city and vicinity as well as the New England territory.

A third story is to be added to the building now occupied by The Tucker Duck & Rubber Co. at Fort Smith, Arkansas. This will enable the company to add to its operating force and afford space for the installation of the necessary machinery for the increase of its output.

The Oshkosh Pneumatic Hub Co. has recently been organized at Oshkosh, Wisconsin, with a capital stock of \$20,000, to manufacture a new invention for automobile and motor truck wheels. The organizers are Fred E. Zuehlke, Frank Doemel and Joseph Laus, Jr.

The Electrical Exposition and Motor Show of 1913 will be held in the new Grand Central Palace, New York, from October 15 to the 25th.

**A BRITISH GOODYEAR COMPANY.**

Tourists can now obtain the same Goodyear service in Europe that is possible in America. A new company has been incorporated under the name of The Goodyear Tyre & Rubber Company, Great Britain, Limited, organized under British laws. This company will control all business with the exception of North and South America. The company's headquarters will be located at Central House, Kingsway, London, with agencies in Vienna, Copenhagen, Helsingfors, Berlin, The Hague, Christiana, Bucharest, Odessa, Stockholm, and Zurich; also at Cape Town and Johannesburg, South Africa.

## NEW TRADE PUBLICATIONS.

## A HANDSOME SOUVENIR PUBLICATION.

TO bring their rubber machinery in suitable and attractive form to the attention of interested visitors to the Brazilian National Rubber Exposition, to be opened this month at Rio de Janeiro, the firm of David Bridge & Co., Castleton, Manchester, England, has prepared a handsome souvenir publication. In its 136 large pages they first describe and illustrate the successive steps in the gathering and preparation of rubber, the text being in Portuguese. The latter portion of the work is devoted to description and illustration of the machinery, tools, etc., they make for the use of rubber manufacturers. It is an interesting work, in every way worthy of the firm whose productions it represents and of whom copies may be obtained on request.

## A NEW PRICE-LIST OF REAGENTS.

The importance of purity and standard strength in the reagents they use in their tests is fully realized by chemists and analysts, and is good and sufficient reason for the widespread demand for Merck's Standardized Reagents, supplied by Merck & Co., New York and St. Louis, and known from the style of their packaging as the "Blue Label Reagents." They have recently issued a revised price list of these goods for 1913, which will be forwarded on request to those interested.

## A FOLDER ON A MINER'S BOOT.

The United States Rubber Co. has recently distributed a large eight-page folder descriptive of the "Hub-Mark" Miner's Trawler Bootee. This shoe is made of particularly strong duck, water-proofed by frictioning the rubber into the duck as the two go together through the calenders. For a shoe meant for heavy work it is comfortably light weight, and, being laced, fits as

snugly to the leg as the wearer may desire. Its distinctive feature lies, however, in its triple thickness of sole, and especially in the first sole, which, it will be noticed by the illustration, has an all around extension which acts as a buffer against hard knocks and saves the shoe.

This folder is illustrated



by five large half tones, six inches square, made from photographs taken in the mines where the miners wearing "Hub-Mark" Bootees are at work in their various operations. One picture shows them digging out coal; another shows the driver with a loaded car; another shows the spragging of the car—that is, the stopping of the car with a piece of wood in the wheel on the down grade; a fourth shows the miner pushing coal down the chute with his foot, and the fifth shows him at that comfortable moment when he has arrived home after a hard day's work and is removing his bootees for footwear better suited to the upper walks of life.

This folder is intended for distribution among the miners and is printed in three languages, English, Hungarian and Polish. The illustrations should appeal to the miner with particular force, as they set forth so graphically the sort of life he leads under ground.

## GOODRICH LITERATURE.

"The Goodrich" for August, being number 11 of Vol. 2, is an unusually interesting issue. Besides being devoted primarily to the advertisement of the B. F. Goodrich Co.'s specialties in tires, with illustrated descriptions of their manufacture and employment, it contains other matter of a general character of an excellence entitling it to special distinction as a high class house organ.

## "TOP NOTCH" RUBBERS.

It is not only the compounding and curing of rubber which engage the attention of the maker of rubber footwear. Other points demand his care—such as construction, shapes and styles of lasts, and other elements of a well-made shoe. These demand special experience in the line itself.

It is to the possession of experience that the Beacon Falls Rubber Shoe Co., of Beacon Falls, Connecticut, attributes its success in the manufacture of rubber footwear. In a neat catalog of twenty-four pages and cover, recently issued by the company, it states that it has had sixty years of continuous experience in the manufacture of rubber footwear—which carries the company well back to the early beginnings of the rubber industry in this country.

The catalog has to do particularly with the "Top Notch" rubbers manufactured by the company, which it states cost more than other rubbers but are distinctive in style and appearance and therefore give the retailer something to talk about when offering these rubbers to his customers. Particular attention is called to some new lasts, among them the men's "English Flat Last," the woman's "Lopug" and a certain type of extension heel which the company calls the "Clincher Cushion." The catalog is illustrated by a great many wood cuts of the boots, lumbermen's arctics, overshoes, and tennis shoes made at the factory in Beacon Falls; and the prices are given in net figures so that the retailer knows just what everything is going to cost him.

## IN BUSINESS 75 YEARS.

The firm of A. R. Underdown's Sons, 202 Market street, Philadelphia, has just issued a souvenir book of some 36 pages and cover, in celebration of its completion of 75 years continuous business life. The firm was established by Isaac Underdown on South Water street, Philadelphia, in 1838, for the purpose of dealing in oiled clothing. Later Mr. Underdown was joined by his son, A. R. Underdown, who became a member of the firm in 1863. Mr. A. R. Underdown retired from the concern in 1909, leaving his two sons, Howard and A. R. Underdown, Jr., to carry on the business. While the firm originally dealt only in oiled clothing, it later added a department of rubber goods and for many years past has made the wholesale distribution of those goods its principal work. This souvenir book is generously illustrated, but perhaps the most interesting pictures are the four photographic reproductions of the company's store—first, as it appeared in 1838; second, as it appeared in 1863; third, as it was from 1883 to 1909, and the fourth as it is today.

## FACTS ABOUT FIRESTONE TIRES.

A neat pamphlet, distinctive in appearance and telling all about their tires, has just been published by the Firestone Tire & Rubber Co., Akron, O. With the aid of excellent illustrations it seeks to demonstrate the grounds on which the claims as to their superiority are based.

## BELMONT PACKINGS

In a profusely illustrated catalog of nearly 200 pages, the various types of packing it makes for steam, water, ammonia, hydraulic, oil, gases, acids, etc., are described by the maker, the Clement-Keston Co. Philadelphia, Pa. In view of the importance of reliable packings in most mechanical equipments, it will doubtless be of interest to many of our readers.

## THE ADVANTAGES OF BALATA BELTING.

The "Goodyear—A Family Newspaper," published by The Goodyear Tire and Rubber Co. of Akron, Ohio, contains a variety of articles on different phases of the manufacture of tires and mechanical rubber goods, written by the foremen of its different departments. This insures correct technical knowledge on the part of the writers. In a recent issue there is an article on balata belting by R. D. Burr, manager of the mechanical goods department of the company's Chicago branch, in which the following interesting paragraphs appear:

"In America, balata belt in reality is as yet but little known and little used, compared with either leather or rubber belts. Its construction makes it particularly adapted for transmission purposes, where the following conditions must be considered: 1st—High speed—small pulleys; 2nd—Heavy and uneven loads, suddenly applied and taken off; 3rd—Damp, wet conditions; 4th—Use of idlers; 5th—Minimum stretch.

"With these conditions in mind, on account of the extreme flexibility, great tensile strength, and the fact that the belt has a frictioned surface, insuring perfect pulley contact, we can recommend it for service over high-speed small pulleys.

"Equipment of this nature is found in saw and planing mills, paper mills and cement plants. In saw mills, one of the hardest machines with which the belt manufacturer must contend, is the edger. Belts required on this machine are usually from 35 to 50 feet in length and from 12 to 20 inches in width. The machine operating at a very high speed, ranges from five to seven thousand feet per minute, with pulleys of too small a diameter.

"In planing mills, there are the planers and sizers, both of which are operated at high speed over small pulleys and with heavy loads. On this machine, especially, the pulleys supplied are seldom large enough. This makes a belt of a sufficient number of plies to insure withstanding the strain of the load necessary. In the use of rubber belts, ply separation is the general complaint made by the user. When using this belting the number of plies must be sufficient to carry the load. With balata belting of a heavy, closely woven fabric, it is possible to use a belt of a less number of plies and still obtain at least the same results or probably better."

## KOEBIG PACKINGS.

With such an essential mechanical requisite as steam packings, the user requires to be assured of the quality. In his recently issued catalog, P. W. Koebig tells the story of his various grades, commencing with the well-known "H P" or "Koebig" High Pressure Packing, intended for pressures exceeding 100 pounds.

The catalogue further describes and illustrates this maker's "Comal" square flax packing, and likewise his combination grades. Sheet packings are shown in various forms, while a full collection of valves and gaskets supplements the assortment. Full lists follow of steam and water hose, as well as of molded rubber factory sundries. In a paragraph on quality this statement appears: "If there were better packings I would sell them." To those interested Mr. Koebig offers the facility of catalogs in Spanish and Portuguese. [P. W. Koebig, 116 Broad street, New York.]

## SIMPLEX STEAM SPECIALTIES.

"The Blow-off" is the title of a periodical booklet, now in its second year, distributed by the Yarnall-Waring Co., Philadelphia, Pa., in the interest of its specialties. The Simplex Seatless Blow-off Valve, "Lea" V Notch Recording Meter, Simplex Pipe Joint Clamp and Simplex-Caskey Hydraulic Valves, are the specialties to which it is particularly devoted, and descriptions and illustrations of which, with other interesting matter, make up the contents of its 16 attractive pages.

## THE EDITOR'S BOOK TABLE

RUBBER PRODUCING COMPANIES, 1913. EDITED BY MR. B. Hyde Pearson. The Mincing Lane Tea and Rubber Share Brokers' Association, London. Board covers, 8vo, 512 pp. Price 3 shillings.

THIS is a well-printed volume containing particulars in regard to the capital, securities, properties, production, prices obtained, etc., list of officers and directors, dividends paid, office, telegraph and telephone address, etc., of some 530 companies, having an issued capital of £52,477,000. The value of this publication consists in the accuracy as well as the completeness of the information it furnishes. Whenever possible the particulars have been obtained directly from the companies and are the latest available, while as addenda are lists of secretaries and directors. The companies other than those in the Far East are separately classified.

For those interested in rubber companies, either as investors or in any other respect, and as a review of the rubber producing interests of the world, the book is a valuable work of reference, while its excellent arrangement and typographical execution make its consultation a pleasure.

MOZAMBIQUE: ITS AGRICULTURAL DEVELOPMENT. R. N. Lyne, F.L.S., F.R.G.S. Late Director of Agriculture, Province of Mozambique. London: T. Fisher Unwin. [Cloth; 350 pp., with index, map and 16 illustrations.]

In his official position as Director of Agriculture of Mozambique, and with the experience obtained as incumbent of similar offices in Ceylon and in Zanzibar, the author has been able to present a remarkable picture of the importance to Mozambique of its agricultural interests. Treating at length of its natural advantages, he devotes separate chapters to each of its most important products, including rubber, both wild and cultivated.

Ceara rubber (*Manihot Glaziovii*) is the variety found best adapted to prevailing conditions in Mozambique, and Inhambane in the southern part of the province is reported as the chief center of experiment in its cultivation. The best results are obtained on the gray soil, and Captain Cardozo, late governor of Inhambane, an enthusiastic and successful rubber planter, conducted, in 1906, a series of experiments with four six year old trees which were tapped for 92 days, from January 7 to June 20. The average yield per tree was 290 grammes (10.15 ozs.), the average per tree, per day, 2.55 grammes, the product being fine, clear, tough rubber, with good nerve. The fact that the yield of latex showed a heavy increase the second season, indicates good wound response. *Manihot dichotoma* was also tried in the Quilimane district, but did not prove as satisfactory as the *glaziovii*.

While replete with valuable information, the book is notably readable and affords an excellent idea of the productive possibilities of this comparatively little-known land.

## THE MERCHANTS' ASSOCIATION OF NEW YORK.

Founded to "foster the trade and welfare of New York," the above organization through its publicity bureau, has sent out its year book for 1913, which includes a list of the members of the organization classified according to their lines of business. It is an interesting publication, especially as showing the number of prominent firms who have organized for the laudable purpose for which the association was formed. An artistic engraving of the great Woolworth building, in which the association has its headquarters, forms the frontispiece to the year book.

## VALUABLE INFORMATION IN CONCISE FORM.

Two pamphlets recently issued by the National Fire Protection Association, New York, will be found to contain a fund of useful information for manufacturers and others. They are "Suggestions for Protection Against Lightning" and "Rules and Requirements for Electric Lighting," both prepared by the National Board of Fire Underwriters, and covering all that should be known on these important subjects.

## New Rubber Goods in the Market.

### RUBBERS THAT PROTECT THE GROUND.

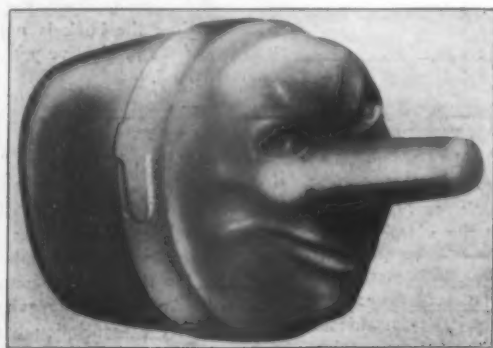
**H**ITHERTO rubber overshoes have been worn for the purpose of protecting the feet against outside conditions, but here is an illustration of a rubber overshoe—or at least a partial overshoe—intended to protect outside conditions from the feet. This is a rubber covering that fits over the heel and comes forward to the ball of the foot, the space under the arch of



the shoe being filled in with some material. It is fastened on the foot by three straps going over the instep. When this rubber is put over the shoe the most high-heeled pattern affected by any woman is converted at once into a perfectly flat-footed surface, the intention being to wear this rubber shoe in playing croquet, and possibly tennis, or other outdoor games where high heels with very narrow bottoms are liable to cut up the ground. This, by the way, is the invention of a citizen of Surrey, England. To be sure, most people intending to engage in outdoor sports would get a pair of rubber soled shoes made especially for that purpose, but if any woman is so devoted to her high heels that she cannot be parted from them, here is a device that will enable her to retain them and still operate on tennis and croquet courts without injury to the grounds.

### A COOL BITE FOR JUVENILE BITERS.

The baby has a host of friends. Somebody is doing something for his comfort and peace of mind continually. The latest embodiment of this thoughtfulness for the youngster is to be found in the "Koolbite Teething Toy" which is herewith illustrated. While this is called a toy, it is a toy with a serious purpose. The accompanying picture shows what a winsome face this device has been given, which ought to appeal at once to the infantile mind—and particularly that long rubber nose, which every well disposed baby will insist upon biting forthwith.



THE KOOLBITE TEETHING TOY.

But that humorous visage masks the maker's real purpose. It will be noticed that there is a ring around the center of this article, dividing the face from the back of the head. The device at this central point can be taken apart, when it will be discovered that it contains a small aluminum receptacle which also can be taken apart and filled with cracked ice. When put together it is water tight, and no ice nor water can get out any-

where; but they serve to cool the elongated nose on which the child bites, and in this way the superheated gums of young people engaged in the interesting occupation of teething are cooled and relieved of their inflammation. Its entire weight is only 1¼ ounces. It is 4 inches long and 2¼ inches in diameter, so in neither size nor weight is it any great strain on the youngster's strength. (Koolbite Company, Inc., 96 Broadway, New York.)

### A FINGER TOOTH BRUSH.

Here is an illustration of a tooth brush intended to be worn on the finger—invented by an Englishman who evidently thought that the saving of space was a prime consideration; for the advantage of this brush over others is simply that it does away



with the handle and substitutes the human finger in its place. The brush itself is made of bristles fastened into a base of celluloid, hard rubber or water-proofed leather, as the case may

be. This base is cemented on a flexible cot or sheath made of rubberized fabric with a soft rubber tip. A button is provided at the mouth of this sheath to make it more secure when on the finger. The illustration gives an adequate idea of this highly important invention.

### A RUBBER DISC TO LIFT OFF THE CREAM.

It is sometimes desirable to separate the cream from the milk in the bottle which the milk-man leaves at the door in the morning. Here is a very simple device for accomplishing that



DISC GOING DOWN.



DISC COMING UP.

end. It consists of a flexible rubber disc to which three long aluminum wire handles are attached, and they are so arranged that the disc can be dropped down through the cream edgewise, as shown in the first illustration, and then brought up under the cream flat, as shown in illustration No. 2. The disc just fits the bottle at the point where the cream should normally rest on the milk. With the wire handles the disc is then drawn up, and, being flexible, continues to fit the neck of the bottle as it grows smaller, thus lifting all the cream and leaving the milk. Where the milk is not up to standard quality there will naturally be a little milk with the cream; and if the milk is above standard quality—but this never happens. [Hamlin & Russell Mfg. Co., Worcester, Massachusetts.]

### CEMENTING WALLS WITH RUBBER HOSE.

Rubber hose can hardly be classified under new goods, but here appears to be a new use to which rubber hose has recently been put. The custodians of St. Paul's Cathedral in London have been very much disturbed of late by the cracks appearing between some of the big stones of that structure, and they have finally devised a way of filling these up and making the walls as solid as ever. They filled the cracks with cement by means of a rubber hose attached to the proper machinery, which, by the use of compressed air, drives the cement into the remotest corners and knits the stone solidly together.

## NEW RUBBER CAPS AND COATS FOR FALL.

IF there remain any adherents of the old belief that an article of special attractiveness must necessarily be lacking in genuine merit, they have only to visit the departments in certain of our New York stores devoted to the latest in waterproof garments for fall to be convinced that the beliefs of our ancestors, like the raiment of their day, must undergo a painful process of remodeling before becoming suitable for present-day use; for in these departments it would seem that the highest art had



FIG. 1. LADIES' RUBBER CAPS.

been exercised, both in design and manufacture. Photographs of some especially attractive models are reproduced herewith.

In illustration No. 1 we have ladies' caps, the one made of rubberized poplin, and the other of waterproofed serge, for use on stormy days or as auto or driving caps to protect the hair from wind and dust—each so fascinating in appearance as not only to add to the appeal or charm of a pretty or handsome face, but even—by directing to itself unusual attention—capable of performing the much more difficult feat of securing for the



FIG. 2. CRAVENETTED RIDING HABITS AND SPORT SUIT.

wearer forgiveness, for the time, for the crime of homeliness.

Coats in materials similar to these caps, in loose-fitting and adjustable-belt styles, are also prominently displayed, the most noticeable difference between these and the summer models

described in our June number being that of weight of material employed. But the line of raincoats for general wear as regularly carried in retailers' stocks has been supplemented this season by an assortment of waterproof riding habits and sport coats, unusually appealing in design, embodying all the distinctive and attractive features of the most advanced styles. Figure 2 gives an excellent idea of three of these latest offerings. The habit illustrated is of cravenetted English melton, and may be had in oxford, blue, brown or black, with satin-lined coat, rubber faced, safety side or new divided skirt and breeches to match, in ladies' or misses' sizes. The little girl's coat and breeches as pictured are shown in one store in sizes as small as five years. They are of cravenetted English habit material, in brown, gray or oxford, and of black and white checked worsted, the coat satin-lined and rubber-faced, and the breeches with buckskin-reinforced chamois seat. The sport suit is shown in misses' sizes only, in tan, brown or taupe cravenetted corduroy or of tan or brown cravenetted khaki. The coat of this suit has a semi-belted back and reinforced shoulders, and the shell skirt is open front and back.

Illustration No. 3 shows a boy's storm cap, with hood and cape effect, affording absolute protection to the head and neck. This cap is of rubber, made with cemented seams, in black only, and, in view of the service it is bound to render and the joy such a cap affords the little chap, is remarkably moderate in price. He might, however, be a young man of strong individual preferences and declare in favor of a rubber hat, which leaves his neck free (to be protected while actually out in the rain by the storm collar of his coat) and which is designed to shed the rain away from his head and on to his shoulders.

Illustration No. 4 shows such a hat, with the necessary raincoat accompaniment. This coat is of double texture, has two side pockets, cemented seams and a vent at the center back seam, which may be fastened with a button and button-hole—following in every respect the style of the men's raincoat. The little lad who starts off for school in his outfit of rubber hat or storm cap, raincoat and rubber boots, causes his parents no uneasiness due to the thought that he lacks the proper equipment of outer clothing.

For those who must be out in all kinds of weather, garments which will protect the person as well as the perishable attire of the wearer are sensible and practical investments, and the



FIG. 3. BOY'S RUBBER CAP AND CAPE.



FIG. 4. BOY'S RUBBER COAT AND HAT.

described and illustrated models are so designed as to combine service and style effect at very low cost; while for those who dislike to be deprived of their morning ride or tramp, outfits as here mentioned, which afford warmth and protection from the rain and at the same time justify no adverse criticism as to fashionable construction, will be welcome wardrobe additions.



#### RAINCOATS FOR DOLLS.

In addition to supplying rubber garments and caps and hats for actual people in real life, some manufacturers have provided comprehensive lines of rubberized garments for the doll family. The Stern Specialty Co., of New York, London and other places, for instance, carries fifteen different styles of rubberized coats and cloaks for small people made of china and wax. These garments are made both in silk and cotton. The accompanying illustration shows a handsome young doll all ready for an automobile ride, in her rubberized coat and a pair of goggles.

It has not yet come to the notice of the editor of this column whether a full line of mackintoshes has been made for the dog family, but it is not an unusual sight in inclement weather to see bulldogs and other dogs of high degree moving decorously along the city avenues protected by rubber blankets, lined with wool to keep the animal warm while the rubber keeps him dry.

#### RESULTS OF VARIOUS COAGULANTS

COAGULATION has been defined as the formation of liquid latex into a mass, thus giving birth to a substance of extremely "nervy" and elastic character.

As M. G. Vernet remarks, in the "Revue Internationale," two principal theories have been propounded with respect to this process. On the one hand, it has been maintained that the thickening of the latex is only caused by the coagulation of the albuminoids, in the same way as globules of blood are agglutinated by the coagulation of the albumen present.

M. Victor Henri, on the other hand, entirely rejects this view. Assimilating the coagulation of latex with the precipitation of colloids, he considers that it is chiefly produced under the influence of electrolytic agents; that is to say, of salts, acids and compounds acting in that way.

In M. Vernet's opinion, the views of M. Henri are likely to make rapid progress among students of coagulation. They lead him to believe that the best qualities of rubber can be obtained by the use of salts and acids as electrolytic agents. He considers, however, that coagulation may be induced at the same time or separately by various other factors, which he treats in detail as follows:

##### DESSICATION.

The dessication, or evaporation of the water of the latex, causes the formation of a dry extract; but this dry extract has no longer the property of being completely soluble in water, so as to again form the original latex. The globules of rubber, in particular, are agglomerated, and it can thus be said that coagulation takes place by reason of the progressive approximation of the globules.

In practice, this method of coagulation is not willingly used in the case of *Hevea* latex, more or less diluted with water, and reaching the factory in a liquid state. This operation would be too expensive for the rapid cold evaporation of all the water contained in the latex.

##### HEAT.

Heat induces coagulation of latex only in an acid medium.

In a neutral or alkaline medium, the boiling does not lead to the combination of the rubber globules, nor to the coagulation of the albuminoids in the latex; but, if the liquid is acidified, coagulation takes place. The more acid the latex is, the less need is there to raise the temperature to produce its coagulation.

Notwithstanding what may have been said, pure latex is always acid even at the time of flowing from the tree, and it may thus be directly coagulated by heat. It thickens at 65 degs. C. (149 degs. F.) and coagulates at 70 degs. C. (158 degs. F.). This system is, however, but little used.

##### SALTS.

It may be said that at the present time salts are not used for producing the coagulation of *Hevea* latex, trials made in Java and Ceylon having been unsatisfactory. It has been found that the quantity of the reagents which requires to be used with salts exceeds the weight of organic acids needed for the coagulation of the latex.

M. Henri has brought forward this question again, urging that double and triple salts of metals are excellent coagulants of rubber. He specially mentions salts of calcium, magnesium, zinc, lead and aluminium, which, in an acid medium, produce an electrolytic effect on the grouping of the globules.

Difficulties have attended the use of salts without the addition of acid to the latex to produce coagulation, but M. Vernet considers it possible that the judicious choice of reagents, and the extent to which they are used with ordinary latex not freed from acid, may lead to very satisfactory results.

##### ACIDS.

It was at first thought that the action of acids upon coagulation was only due to the insolubility of the albuminoids, containing the globules of rubber. M. Henri has since shown that with latex freed from its salts or crystalloids, acids do not produce complete coagulation, but only the agglutination of the rubber. In ordinary *Hevea* latex all acids produce coagulation, but the proportions of organic acids needed for that result are larger than is the case with mineral acids. The former are, however, preferred, on account of the corrosive action of the latter (such as that of sulphuric acid, hydrochloric acid, or azotic acid) upon the impurities which remain in the mass, as well as upon the metallic portions of the plantation factory plants.

##### USE OF SALTS AND ACIDS TOGETHER.

Finally, M. Vernet advocates the combined use in coagulation of salts and acids. To use his own words, "Like salts, acids employed alone do not produce good results, but remarkable effects can be obtained by the simultaneous use of both."

#### INDIA WANTS AMERICAN ASBESTOS.

The United States consul at one of the large centers in India sends in the following information (Consular report No. 11,457) regarding the demand in that country for American made asbestos sheets:

"A business firm in India would like to ascertain if any American firms make corrugated asbestos sheets for roofing. This firm knows at present of these sheets being made only in Canada, and would like to secure competitive quotations if possible from the United States and act as agent for any American concern which may turn out a reliable and low-priced article. It is thought that India presents a good field for corrugated asbestos sheets for roofing, as these would prove cool and light for the hot Indian climate."

Should be on every rubber man's desk—Crude Rubber and Compounding Ingredients; Rubber Country of the Amazon; Rubber Trade Directory of the World.

## The India Rubber Trade in Great Britain.

*By Our Regular Correspondent.*

### RAW MATERIAL AND THE TRADE.

**A**LTHO trade generally is reported as good—except in the waterproof branch, affected by the dry summer and the poor colonial demand—there has been no exceptional briskness. Continued weakness in raw material has had the effect of inducing large contractors to defer placing their contracts, in the hope of getting still better terms. The very informative summary of the prospects of raw rubber during the next few years, by Mr. Malet, in the Straits papers, "Financier," etc., has been read with interest by manufacturers. Among the comments I have heard are many expressing the opinion that Mr. Malet has somewhat underestimated the probable output from the plantation industry. With reference to limiting the output on the lines of the American copper producers, this is regarded as an unworkable proposition, as the running costs will remain practically the same. The rubber, manufacturers say, will all have to come on the market for the best price it will fetch, which, of course, will suit their book and accentuate the present policy of buying from hand to mouth. This expression may be taken as referring to covering requirements for about three months ahead, not three days, as some purchasers of rubber goods seem to imagine when they ask for a reduction in price the day after reading in the paper that a slight fall has occurred in the raw material.

This matter of reduction in price of goods is much to the fore at the time of writing. During the last few months the manufacturers have undoubtedly been getting a bit of their own back, but the general revision of price lists is a matter which can hardly be further delayed. At the same time buyers of rubber goods are apt to overlook the fact that the price of raw rubber is only one factor in the position. Manufacturing costs generally are higher than they were; cotton is up, and many chemicals—notably litharge—have risen in price.

### RECLAIMED RUBBER.

The world's consumption of rubber having increased considerably in the last few years, it goes without saying that there is more raw material available for the reclaimers, who keep busily employed despite the great drop in price of raw rubber. An important occurrence of the past summer has been the falling in of the Marks alkali patent, worked by the North Western Rubber Co., at Liverpool. The other alkali patent—that of Price, worked by The Rubber Regenerating Co., Limited, at Trafford Park, Manchester—has still some years to run, and it will be remembered that two years ago a working arrangement between the two companies as regards their patents was agreed upon. The Trafford Park Co. is again enlarging its works, to cope with increasing trade; and it has recently been announced that the Xylos Rubber Co.—also an American undertaking—has acquired between two and three acres for new works for regenerating rubber. The Xylos Rubber Co. is connected with the Firestone Tire & Rubber Co. As an American company cannot hold land in Trafford Park, an English company has been registered, one of the directors being Mr. Marshall Stevens, the managing director of the Trafford Park Estates Co., Limited.

I understand that the Mersey Reclaiming Co., whose works at Stockport were burnt out in the spring, has decided not to recommence business.

A new works, the Pomona Rubber Co., Limited, of City Road, Manchester, is putting on the market reclaimed rubber made by a new process.

If we take into account G. H. Scott & Co., Anderson & Co., The British Recovered Rubber Co., Hallas & Co., and Alfred Smith, it will be seen that the Manchester district is an important

center for the production of reclaimed rubbers. With regard to the price of waste rubber, the reclaimers raw material, it is noteworthy that prices do not rise and fall in sympathy with the raw rubber market, changes of moment in values taking some time to mature; and it is therefore not to be expected that reclaimers can make weekly or monthly alterations in their price lists.

I have not seen any of the "Fish rubber" which, I understand, is being made in Holland, but have had inquiries on the subject from fishing ports in England, as to whether there is money in it. My own opinion on the project is supported by the dictum of the Henriques Laboratory of Berlin—that it is worthless.

### MR. J. CARTER BELL.

Mr. J. Carter Bell, a well-known public analyst, died recently at Manchester, after a somewhat lengthy period of ill-health. Thirty years ago—before rubber chemists were as common as they are now—he specialized to some extent in rubber analysis, and in more than one legal case gave evidence in opposition to Dr. Burghardt, the other Manchester rubber analyst of the day. It was this association which led to his son, Mr. P. Carter Bell, becoming connected with rubber, first in England and subsequently in New York, where his business in substitutes, etc., has for many years been brought before the readers of the INDIA RUBBER WORLD through the medium of the advertising pages.

### MR. H. P. MOORHOUSE.

Mr. H. P. Moorhouse, who died recently, was an American who had long been settled in Paris as the representative of the Revere Rubber Co. and the Philadelphia Rubber Works. It was in the elastic thread trade that he was perhaps best known, certainly in England, where he made frequent visits to Leicester, the headquarters of the elastic fabric industry, to superintend the business carried on there by a resident agent. In 1906 I had the pleasure of meeting Mr. Moorhouse in Paris and heard from him that he imported the first lot of reclaimed rubber that was sent from America. This Mitchell rubber, as it was then called, was used in the manufacture of steamship valves. It is understood that the thread business of the Revere Company will be carried on by Mons. J. Clerc, Mr. Moorhouse's assistant, at the old address, while the reclaimed rubber business will be done by the Philadelphia Co. at an office of its own at No. 29 Rue des Petites Ecuries.

### ADMIRALTY CONTRACTS.

Questions having been asked in Parliament as to why Brazilian rubber was stipulated for, the secretary to the Admiralty replied that this stipulation had been removed in 1907, the best rubber only being mentioned. It was further said that Fine Hard Pará was only mentioned in connection with one or two small items. As some interest has been evinced as to what these items are, I may say that in the latest Admiralty specifications Fine Hard Pará is only required for electrical tape; therefore the complaints of the plantation magnates have no foundation, or at any rate, but very little.

### LAMP BLACK.

I have read the digest of Mr. Cabot's paper as given in the INDIA RUBBER WORLD for August with interest. The nomenclature of blacks as used in the rubber trade has always been in a state of confusion, different dealers using the terms—"lamp," "carbon," "vegetable," etc., without any particular reference to their origin. The American carbon black of high coloring power has now largely ousted the various blacks of highly differing coloring power which were sold to the British rubber trade 20

or 30 years ago, tho of course the price is much greater than in the case of inferior brands, such as mixtures of lamp black and whiting. The term "vegetable black" was not used by Mr. Cabot. In England this refers either to lamp black produced from burning heavy oil or to finely powdered charcoal made in stills. At one time large quantities of this latter material were sold to the rubber trade, its comparatively low price being a desideratum. Its main drawback was its liability to spontaneous combustion, this having occurred several times in my own experience. Such occurrences were no doubt due to faulty manufacture and may be considered therefore as preventable.

#### IMPROVING INFERIOR GRADE RUBBERS.

An interesting patent has been taken out by Doctors Spence and Russell and the Diamond Rubber Co., for the above purpose. By mere admixture of metallic sodium or powdered caustic soda with low-grade rubbers, and the subsequent washing out of the alkali, they claim to convert the rubber to a much higher grade. The eminence of the patentees is a guarantee that there is something in the idea, which cannot be said of the bulk of rubber patents. Of course, authorities are predicting the disappearance of low-grade rubbers from the market in the course of a year or two, so that this patent, if successful, may have but little application. Up to now it has been held that caustic soda at a moderate temperature has no action on rubber, and it will be interesting to hear more about the hard, tenacious body produced by merely mixing caustic soda with the rubber on the rolls. Is the change merely a conversion of the resins into hard soaps or does the rubber itself undergo any modification? *Prima facie* resin soaps, if they are formed, do not appear to be highly desirable components of rubber mixing. A good many years ago the use of metallic stearates and oleates was proposed in rubber mixing, but nothing satisfactory resulted. The invention, it is stated, is applicable also to waste or oxidized rubber, especially that which is produced by devulcanizing operations; so that we may have here the germ of an improved rubber reclaiming process. Interest now centres mainly upon how goods manufactured from the improved rubber stand the tests of wear and time.

#### THE GORTON RUBBER COMPANY.

I regret to say that this company, owning the Gorton & Droylson rubber works, has not been able to recover from the heavy loss incurred two years ago, things having indeed gone from bad to worse. The present position is that on the application of the debenture holders the court has appointed a receiver who is now in control of the business. Under the law the receiver can either carry on the business or realize on the assets on behalf of the debenture holders. Should this latter alternative come to pass it will be by no means the first case in the Manchester district where a small works has gone under in recent years owing to the lack of sufficient resources to weather a period of depression. At a meeting of the shareholders the somewhat pertinent query was put as to the directors' knowledge of the rubber trade. This is a delicate matter, into which I shall not enter, tho I cannot forbear from remarking how very common it is in British limited companies to choose directors from men of wealth and position quite irrespective of any special or even general knowledge they may have of the business whose destinies they are to control.

#### SYMINGTON & SINCLAIR.

A new firm of rubber and general produce brokers commenced business in London on September 1 at 17 Mincing Lane, under the firm name of Symington & Sinclair. It is the intention of the new concern to confine its operations exclusively to the London market, where both members are well known, Mr. Symington having been engaged in the rubber trade for more than seventeen years and Mr. Sinclair for the past fourteen years.

Replete with information for rubber manufacturers—Mr. Pearson's "Crude Rubber and Compounding Ingredients."

#### TRADE NOTES.

The European warehouse of the Revere Rubber Co. removed on September 1 to its new location at Woodbridge Road, Melton Road, Leicester, England, where, with enlarged space and improved equipment, it will be enabled to more advantageously take care of orders from its extensive territory.

A new agency has been established by The Victor Tyre Co., Ltd., in the West End of London, offices and stock rooms having been opened at 15, Carteret street, Westminster, S. W., near Buckingham Gate, where proper facilities are available for the fitting of tires to customers' cars, and where all the clerical work of the company is to have attention.

Prince Henry XXXII of Reuss, Germany, is president of the Mauga-Marimba Gesellschaft, a corporation formed to engage in the cultivation of rubber on plantations purchased by the Prince in German East Africa. According to current reports, the venture has not proved successful and other products are to partly replace the rubber.

The official commercial registration of the firm "Deutsche B. F. Goodrich," is recorded at Frankfort-on-the-Main. The firm is registered as manufacturing and dealing in rubber goods of every description, automobiles, bicycles and motorcycles of all kinds, especially goods bearing the trade marks "B. F. Goodrich," and "B. F. Goodrich tires." The new firm takes over the Frankfort branch of the company's French house. The business manager is Arthur Ernest Lumsden, of Colombes, Department of Seine, France.

The firm of Peter Rost is reported recently established at Franzstrasse 52a, Köln-Lindenthal, Germany. It will deal in rubber goods of all kinds, making a specialty of aviation equipment and everything connected with air craft.

A new pneumatic tire factory has been established at Budapest, Hungary. It bears the title "Fox Pneumatic Co." and has a capital stock of 500,000 crowns (\$101,500).

The Helsingborgs Gummifabriks-Galoscher Aktien-Gesellschaft Tre Torn, has been commercially registered at Berlin, Germany, to manufacture rubber goods, with a capital of \$100,000 marks (\$23,800).

Italy's imports of rubber for the year 1911, according to statistics recently published, amounted in value to 64,319 lire (\$12,413). Of this amount raw rubber and gutta percha and rubber and gutta percha wastes, made up 30,625 lire (\$5,919.6). The figures show a material advance as compared with the preceding year.

A recent issue of the *Bulletin de l'Association des Planteurs de Caoutchouc a Anvers* (Bulletin of the Antwerp Association of Rubber Planters) announced the formation of a stock company, *Plantations Annamites*, with a capital of 1,250,000 francs (\$241,250), for the establishment and exploitation of various cultures, particularly in the countries of the Far East, including Indo-China. The promoter is probably M. Adrien Hallet, to whom has been allotted 2,500 founder's shares.

#### A STRIKING DECREASE IN MOTOR TIRE EXPENSE.

One of the English papers, speaking of the development of the rubber tire in truck service, makes the statement that the first set of rubber tires to be used on a modern commercial motor-van in that country was tried in the Liverpool-Manchester mail service in the year 1902, and the cost of those first tires was shown by careful computation to range from 10d to 1s 3d per mile, while the second year the cost had been reduced to about one-third of this amount. Some of the large department stores in London which use a great many of these motor-vans have reduced the tire cost to 1/3d per mile, which is about one-twentieth of the cost during the first year of trial, eleven years ago.

## IMPORTS OF CRUDE RUBBER INTO GERMANY.

Germany's imports of crude rubber amounted during the first half of 1913, in round figures, to 9,464 tons, about the same as for the corresponding period of the preceding year. The value was 83,700,000 marks (\$19,920,600). As to the source of supply a slight tendency in favor of Brazil is to be recorded. The latter country still ranks first with some 2,678 tons; but as compared with other supplying countries it has not by any means the advantage it formerly enjoyed. Compared with the first half-year of 1912, imports into Germany from Brazil fell off to the extent of 892 tons. Imports from Mexico, previously second in importance, show a considerable decline, 330 tons against 9,642 tons for the same period last year. On the other hand, imports from the British East Indies have greatly increased, occupying second place with 1,919 tons, compared with 598 tons for the same period last year. The German colonies furnished 1,205 tons, about the same quantity as during the first half of last year. The figures indicate a heavy decline in the use of Mexican guayule, which sprang into favor during the period of high rubber prices and a material increase in the demand for East Indian plantation rubber.

## GERMAN RUBBER TRADE STATISTICS.

From a recently published report of the Imperial Statistical Bureau of Germany some interesting information is obtainable in regard to the rubber manufacturing industry in that country. The report deals with the status of industrial corporations, and this year, for the first time, the rubber industry has an independent classification, having previously been included with the leather manufacturing interests.

The report shows the existence, on June 30, 1912, of 33 companies engaged in rubber manufacturing, with a share capital of 83.7 million marks (\$19,920,600). Of these, 24, with a capital of 63.1 million marks (\$15,017,800), proved remunerative, their profits for the year July 1, 1911, to June 30, 1912, amounting to 14 million marks (\$3,332,000). If we consider the average interest earnings of the capital employed in the rubber industry, we find that it amounts to 8.39 per cent. for the period in question. The nine concerns that operated at a loss employed capital amounting to 19 million marks (\$4,522,000), and booked a deficit of 5.4 million marks (\$1,285,200); so that while the business proved to some concerns quite remunerative there was nothing extraordinary in the profits recorded by the industry as a whole, more especially as the capital would have to be turned over several times to make the profit average recorded, which would mean a considerable reduction in the net gains.

## A PRIZE FOR THE BEST PLAN FOR A RUBBER FACTORY.

The publishers of "Gummi Zeitung," the rubber paper of Berlin, offer a prize of a "silver vase valued at £25" for the best design for a factory for the manufacture of rubber goods. The competition is open to anyone in any country, and the title remains the property of the competitor, altho the right of reproduction is reserved by the publishers of the "Gummi Zeitung." The plans must be sent in before the fourteenth of next May, to the Awards Committee, in care of A. Staines Manders, 75, Chancery Lane, London, W. C., and the award will be made during the London rubber exposition in June of that year. Anybody who is desirous of entering this interesting contest can write to Mr. Manders for specifications and for an entrance blank.

## NO MORE STEEL TIERED TRUCKS IN PARIS.

Beginning with the fifteenth of the present month, commercial vehicles with steel tiered wheels will be barred from the streets of Paris. All commercial vehicles must have rubber tires. The same law has been passed in Germany, covering the larger cities. It has been found necessary to take this action because the steel tires not only cause a disagreeable vibration when going through the streets, but—which is even more serious—have been found to cut up the pavements very badly.

## THE ORIGINATOR OF "TUCK'S PACKINGS."

EVERY one in the mechanical rubber goods trade is familiar with the goods known as Tuck's packings. They are staple goods made by scores of factories but few probably know their beginnings. This packing takes its name from an American named Tuck, who, like all inventors, was very much of a character. Of his many inventions, the packing that bears his name is the only permanent reminder of him. There is, however, on London docks a tradition of a huge metal diving bell which he built that had a new type of inlet valve, a special pet of the inventor. To demonstrate its efficiency, he and some of his friends got into the bell and went to the bottom of the Thames one day and while Mr. Tuck was explaining the excellent qualities of the valve it stopped work and all of them nearly lost their lives. His packing, however, was as successful as the diving bell was unsuccessful, and in 1850 he started a little factory at Lambeth on the Thames. This business prospered and he was connected with it until his death.

In 1864 George William Taylor entered the firm. He came from an old English family, who placed him in a large importing house to learn the business. The line was not to his liking and he ran away and started in to learn the rubber business. Soon he became a stockholder in the Tuck concern and as it prospered induced his brother Edward to come with him.

In 1882 they built an entirely new factory near the site of Tuck's original buildings. Both of the brothers had a strong mechanical bent and were able to make almost any kind of machine that they needed. For example, when the first dynamos appeared and were very costly and unreliable, they built one of their own which is still running and doing excellent work. Then those two men, with only the assistance of a trusty laborer and some differential pulleys, set up and started in operation the heavy special machinery at their Cardiff factory, thus keeping its existence secret.

Not only was this company a pioneer in packings, but its managers have constantly increased their output and are very proud of the fact that the quality of their goods has never been changed. They have branches for the marketing of their goods all over England and Ireland, and agencies all over the world.

## EUROPEAN RUBBER SYNDICATES?

ACCORDING to European advices, steps are being taken in various countries to promote the sale of plantation rubber. In Paris, a committee of twenty is said to have been formed to protect the interests of producers, on the basis of a limit of price of 3s or 3s 2d per pound, with standard prices for the three chief grades of plantation rubber. It is said to be proposed, moreover, to invite the co-operation of the producing companies, with the view of raising a capital of \$100,000 to establish a central institute for studying the more extensive use of plantation rubber.

The idea would seem to have been taken up by other countries. One report from Antwerp says that the Belgian government is trying to form an international rubber syndicate. It is further stated that the Dutch government would form part of the organization, which would have a capital equalling \$12,000,000 to \$20,000,000.

The Belgian government is reported to have been in communication with the Brazilian administration as to the formation of this International Syndicate.

In reproducing this report under all reserve, the "Gummi-Zeitung" remarks:

"This means the monopoly of the entire rubber production and by reducing output to re-establish the previous high prices. We are very skeptical on the subject. The work of uniting the various plantations and bringing them to act together is a task the projectors imagine to be easier than it is."

## NOTES FROM BRITISH GUIANA.

By Our Regular Correspondent.

HIS Excellency the Governor (Sir Walter Egerton, K. C. M. G.) has departed upon a long delayed journey through the interior of the colony to the Rupununi District on the Brazilian boundary, the object of which is to prospect and survey the land for the purpose of ascertaining its suitability or otherwise for the building of a railway from Georgetown to Brazil.

His Excellency is accompanied by Captain Napier, *aide de camp*; Mr. C. W. Anderson, forestry officer; Mr. G. M. Bland, an engineer from England, specially engaged by the Government for this survey, and Dr. Wise. The party left Georgetown on September 2 and will travel down the Rupununi Valley, calling at Mr. Melville's station and afterward proceeding to the Brazilian frontier. After visiting the whole of the neighborhood of the Takutu and lower Ireng Rivers, His Excellency, Dr. Wise and Captain Napier will return by the same route, Messrs. Bland and Anderson returning by way of Kaieteur. The trip is expected to last about sixty days and to do much toward revealing the possibilities of the far interior, which are at present but little known apart from what has been discovered by the prospectors of the balata companies and a few others who have from time to time penetrated the bush.

Professor Harrison, Director of Agriculture, and Mr. F. A. Stockdale, Assistant Director, have just published an interesting report showing the progress of the cultivation of rubber in this colony. It appears that there are now 2,250 acres under rubber cultivation, out of which it is estimated fully 1,700 are planted with Pará rubber. This is but a beginning, says the report, as there are fully 9,000,000 acres of easily accessible lands—much of which is suitable for rubber cultivation—that are unalienated from the Crown, and which can be leased from the Government on very liberal terms. Acreage returns collected by the Board of Agriculture are given, indicating the progress of rubber planting in the colony, as follows: 1907-8, 416 acres; 1908-9, 556 acres; 1909-10, 995 acres; 1910-11, 1,740 acres; 1911-12, 2,250 acres. A considerable portion of the report is devoted to the results of the trials at the various experiment stations. "At the Botanic Gardens, Georgetown, experiments in the growing of *Hevea Brasiliensis* were conducted in the shelter belt, in the friable soils of the nursery, in the very heavy soils in the Brichdam field, and on the eastern side of the rice experimental field where the conditions closely resemble those of the abandoned sugar cane fields of the coastal region of the colony. The growth in all these situations has been far from satisfactory. The effect of wind upon Pará rubber trees has been clearly demonstrated, and it has been ascertained that the constant sea breezes that sweep throughout the year across the coastal lands of the colony retard their growth to a very marked degree. Spells of dry weather, which usually occur in this part of the colony about twice a year, have resulted in 'wintering' of the trees, and this has further tended to retard their growth." The report proceeds: "From these experiments it has been clearly demonstrated that the heavy clay soils of the coastal region, formerly cultivated in sugar-cane, are not suited for the successful cultivation of Pará rubber, and numerous observations on the trials carried on by the sugar estates on such lands fully confirm the conclusions drawn from the above experiments." It appears that not only *Hevea Brasiliensis*, but *Sapium*, *Castilloa* and a few other varieties have been found to be unsuitable for planting on the heavy, wind-swept coastal lands. "The yields obtained from these trees were not very good and the rubber had to be collected almost entirely as scrap." The results of the experiments at the Onderneeming station, which have been considerably extended, have been slightly better. "Pará rubber, *Sapium Jenmani*, *S. Cladogyns*, *Castilloa Elastica* and *Funtumia Elastica* have

been experimented with. The growth of the Pará rubber has been generally satisfactory, and over 20 acres are now planted, mainly as an inter-crop with coffee. *Sapium Jenmani* has done fairly well on some soils, while *Castilloa Elastica* has generally made unfavorable growth. *Funtumia Elastica* is healthy and the majority of the plants are making fair growth. There are over 200 trees of *Funtumia Elastica* at this station and some of them have been tapped. The yields were poor, but the product obtained was of excellent quality. The trees that have been tapped continue to make satisfactory progress, and several more trees have reached a size at which they can be tapped." As regards the experiments at Christianburg, Demerara River, the early growth of Pará rubber on the heavier and on the lighter soils was satisfactory, but on the lighter sandy soils the rate of growth has steadily fallen off. The growth of the *Sapiums* on the light soil has been very unsatisfactory and their culture will be discontinued except on the heavier types of soils. In 1910 and 1911 an area of slightly over five acres was planted with Pará rubber on the compact, alluvial clay land of the river bank. This soil is totally different in physical and chemical properties from other soils experimented on, but it is typical of a large area of land in this and other districts. The drainage of the land has received careful attention and the young plants are making satisfactory growth. This soil also appears to be suited to the growth of *Sapium Jenmani*, as the few trees growing on it have made promising growth." At the Issorora station, Aruka River, the results were poor, altho some of the *Hevea* trees are making better progress than they formerly did. At the Bonasika Reserve, which contained a large number of indigenous *Sapium* rubber-producing trees, trials were made with various methods of tapping and coagulation of the latex for the purpose of investigating the value of these trees, but it was soon evident that the amount of latex and cured rubber rapidly decreased upon repeated tappings. "The yield," says the report, "cannot be considered as satisfactory." At the Pomeroun Experiment Station about three acres of rubber have been planted with Pará and *Sapium*. The former is said to be thriving well and making satisfactory progress, but the *Sapiums* are not doing so well.

In summing up, the authors of the report make the following statement: "It has been successfully demonstrated, by experimental plantings, that large areas of British Guiana are eminently suited for the cultivation of Pará rubber." To meet the demands for rubber plants the government imports and germinates the seeds and has a contract with the Botanic Gardens at Singapore covering the next five years, for the shipment of 15,000 *Hevea* seeds each year.

While the report was being prepared, tapping was going on at various points in the colony, and commenting on the samples sent to the Second International Rubber and Allied Trades Exhibition, held in London, Prof. Harrison remarks: "The indications at present show that returns equal to those obtained in the East may be expected from rubber planted in the colony."

Legislation is under consideration for the regulation of the balata industry that will systematize the engagement of laborers under contract, define more clearly the rights of employers towards the employed and between themselves and establish better means of enforcing those rights on both sides. It is intended to register and license only competent bleeders or reliable men capable of acquiring the necessary knowledge and to provide for their supervision while at work by government officers, so that unnecessary damage may not be done in the forests. It is also proposed to place the work of supervision in the hands of the Department of Lands and Mines as better capable of exercising the necessary control.

The absconding evil, which was so prevalent among balata bleeders here some time ago, has now abated considerably, but in

the neighboring colony of Dutch Guiana it shows no improvement. It is reported that the men are leaving the expeditions and crossing over to the British side of the Corontyne River, carrying with them the balata brought from the interior. The Government has been petitioned to seriously consider the adoption of stringent measures in order to remedy the existing state of affairs. For some time past the necessity for amending the ordinance regulating the balata industry of Dutch Guiana has been recognized by the Government, and a decision has been arrived at to submit the whole question to the Government in Holland, with a view to getting the amendments effected.

#### THE RUBBER CONGRESS IN PARA.

A VERY interesting congress was held in Pará in the latter part of August, in which a variety of topics relating to the commercial and agricultural development of that section was discussed. Some twelve different subjects were taken up during the session of the congress, five of these relating to rubber. These five topics are as follows:

Old and modern methods of extracting and coagulating rubber latex.

Practical means of avoiding adulteration.

Re-organization of the rubber commerce.

Organization of the cultivation of rubber trees.

The manufacture of rubber as an industry to be exploited by Brazil.

A comprehensive account of the proceedings of the conference, together with a large number of photographs taken at the time, has been sent us by one of the delegates. Unfortunately, however, owing to delay in the mills, it reached us too late to be used satisfactorily in this issue; but it will appear in our next number.

#### THE CONGRESS FOR THE DEVELOPMENT OF THE AMAZON COUNTRY.

THERE have been received from Dr. Jaques Huber of the Goeldi Museum of Pará, Brazil, the following publications and papers (which will receive more adequate attention in a later issue) presented at the Congress for the "Economical Protection of Amazonia," held in that city on the 15th of August last:

1. "Revista Commercial e Industrial do Pará."—A monthly publication issued by the Commercial Association of Pará, which makes the announcement of the purpose of the congress, and the papers to be read at its meetings; the program of the Rubber Exposition to be held in connection with the congress; an article on "The Rubber Crisis," and one on a new process for the treatment, washing and refining of rubber, by Mr. Alfredo Ferreira dos Santos, and the project of a new law to regulate the work in the rubber districts, by Leopoldo Penna Teixeira.

2. "The Cutting of the Seringueira"; by Dr. Jaques Huber, Director of the Museum Goeldi in Pará.—Comparing the process in use on the Amazon with that of the Orient.

3. "The Organization of the Agricultural Industry of the Seringueira."—Why the Seringueira should be cultivated in preference in Amazonia, and what process should be observed.

4. "The Culture of Cocoa."—Showing the necessity of re-organizing cocoa culture throughout the state.

5. "Considerations on the Manufacturing Industry in the Amazon District"; by Dr. Manoel Lobato.

6. "Reorganization of the Rubber Commerce"; by José Amando Mendes.—Considering the relation existing between the rubber owners and the exporters; Transportation and its cost, in the Amazon District; Freight, Taxes, Export Duties, and possible reduction of import duties.

7. "Instructions for the Smoking of the Latex of the Seringueira"; by Dr. Barroso Rebello.

8. "Economical and Commercial Protection of Amazonia"; by J. Barbosa Rodrigues, Jr.

9. "Old and New Methods of the Extraction and Preparation of Rubber in the Amazon District"; by Dr. José Ferreira Teixeira.

10. "Various Theses and Projects for Improving the Economical Situation of Amazonia."

11. "On the Creation of Rural Associations."

12. "Agricultural Instructions"; by Leopoldo Penna Teixeira.

13. "Measures Against Adulterations and Abuses."

14. "Project of a New Law Regulating Rubber Extraction in the Amazon"; by Joaquín Caribé da Rocha.

15. "The Culture of Tobacco."

#### THE RIO RUBBER SHOW TO OPEN OCTOBER 12.

The Exposition of Tropical Products, including rubber, which was to have been held in Rio de Janeiro last spring and which was postponed until this fall, is now scheduled to open on the twelfth of the present month. It is expected that a very good display of all varieties of South American rubber will be made on this occasion, and particularly of the varieties of rubber produced in the State of Minas Geraes, as this exhibit will be under the supervision of Mr. J. C. Cardwell-Quinn.

#### ENGLISH EXHIBITORS AT THE RIO EXHIBITION.

Some of the English manufacturers of rubber machinery have shown most praiseworthy enterprise in the exhibits which they have sent to the exposition to open at Rio de Janeiro on October 12. David Bridge & Co., Ltd., of Castleton, Manchester, will not only make a fine display of their machinery at that time but they have prepared a remarkable souvenir catalog for the occasion—a book of 136 pages and handsome cover, illustrated by hundreds of fine half tone cuts, giving a great many scenes of rubber gathering along the Amazon, with an equal number of plantation scenes from the Middle East, together, of course, with many views of their machinery in operation. It is a book that will be eagerly sought after and permanently preserved.

Francis Shaw & Co., Ltd., of London, have also installed three of their machines—a large Universal Washer, a heavy Washing Machine and a heavy Crepeing Machine—which will be under the constant supervision of one of their own experts.

These displays of rubber machinery, being absolutely new to the large part of those who will attend this exhibition, will undoubtedly attract a great deal of attention.

#### THE LABOR PROBLEM IN EAST AFRICA.

The labor question in German East-Africa is causing considerable trouble to the planters in the Tanga hinterland, where most of the European enterprises are conducted. The natives are distinctly disinclined to relinquish work on their little holdings in order to take up employment on a distant plantation, or are too much addicted to warlike or predatory pursuits to settle down to steady labor. As a remedy for the scarcity of plantation help, the importation of Chinese coolies or the introduction of natives from Portuguese East-Africa has been suggested. Others incline to the opinion that a head tax should be collected from the natives, who would have to work to raise means to pay it.

#### RUBBER FROM FRENCH EQUATORIAL AFRICA.

A United States Havre consular report states that although only about 300 tons of rubber figure annually as coming directly to France from French Equatorial Africa, an equal quantity from the same source is also received through the Belgian Congo. When the French colony has its own railroads its rubber exports will be properly credited.

Replete with information for rubber manufacturers—Mr. Pearson's "Crude Rubber and Compounding Ingredients."

## RUBBER PLANTING IN COCHIN-CHINA.

By Our Regular Correspondent.

ACCORDING to the report of the Japanese consul at Saigon, there are 12,900 hectares (31,863 acres) devoted to rubber planting in the east and north-east districts of Cochin-China, the southern part of Annam and the Kep section of Cambodia, the number of *Hevea* trees planted on this acreage being 4,005,011. While this territory was at one time considered suited only to the cultivation of rice, the results which have attended the planting of the *Hevea* tree have shown its suitability for rubber production, tho still regarded as slightly behind either Sumatra, Java or the Malay peninsula in this respect.

## HISTORY OF RUBBER PLANTING.

The introduction of the *Hevea* tree into Cochin-China was started by Mr. Belland, who came here from Ceylon, setting out 15,000 trees. This experiment is said to have netted Mr. Belland a profit of 100,000 francs in the year following the first tapping. This was followed by the formation in 1907 of the *Société Agricole de Suzannah*, and the establishment of a rubber plantation along the line of the Indo-China Transcendental Railway, a similar enterprise, known as the *Société des Hevea de Xa-trach*, also being formed in 1908. Both of these enterprises have met with success. The French government has since been experimenting in rubber cultivation at the Ong-Yem Agricultural Test Bureau. Planting so far has not been conducted on a large scale, as in the Malay peninsula, no large stock companies having yet been formed, and the number of trees owned by each individual company ranging from 10,000 to 50,000.

## PLANTATION DISTRICTS, SOIL AND CLIMATE.

The districts now under cultivation for rubber are Baria, Bien Hoa and Thudan Mot in Cochin-China; Guin Hon in Annam, and the more elevated parts of Kampot in Cambodia. The soil of these districts varies, from the red-brown soil of volcanic origin found in the Bien Hoa and Thudan Mot localities in which the French plantations above mentioned are located, to the gray soil on the estate of Mr. Belland. The temperature is about the same as that of the Malay states, and the year is divided into two seasons of about equal length, the rainy season—during which rain falls daily—and a dry season, when rain falls only two or three times a month. The *Hevea* sheds its leaves in the dry season, these falling gradually and new leaves budding at the same time. The spread of rubber diseases such as have been very injurious to the Malay rubber trees, is supposed to be checked by this dry season.

## QUALITY.

Plantation rubber from Ong-Yem Agricultural Test Bureau was exhibited at the Second International Rubber Exhibition in London and on analysis was pronounced to be of superior grade, ranking seventh in the crude rubber competition of the world.

## PLANTING.

The method and style of planting in these districts is similar to that employed in the Malay states, varying according to soil and climate. Seeds are now imported directly from Ceylon (the initial importation by Mr. Belland having come by way of Singapore), thus avoiding the introduction of diseases such as are known in Malaya. The preparation of soil is carried on during October to May, in the dry season, and planting is commenced with the beginning of the rainy period and ended about September. Cultivation is accomplished by means of horse, ox, and, in some cases, steam-driven cultivators.

## TAPPING AND YIELD.

The whole herring-bone system of tapping is employed, and is stopped during January and February. The recorded yield varies from 1 kilogram (2.2 pounds) from a seven years' tree of the *Société Agricole de Suzannah*, to 2 kilograms from ten-year trees planted by Belland and also in the Bien district.

## WAGES.

The wages of coolies in these districts are from 25 to 30 per cent. lower than in the Malay peninsula, and planters are at present experiencing no difficulty in securing sufficient help of this class, while with the completion of the Indo-China Transcendental Railway now being laid through Annam and Cochin-China, a still further supply will no doubt be easily available. Beside the coolies, it is also possible to secure the help of a half-barbarous native class known as "Moy." Their average wage is from 30 to 40 centimes a day for males, and 20 to 30 centimes a day for females, depending upon whether or not their food supply is included.

## CULTIVATED AREA.

The area under rubber cultivation in Cochin-China is given in the following table, representing an approximate investment of over 30,000,000 francs:

Districts.	Cultivated area Hectare.	Hevea trees planted.
Baria .....	1,097	350,632
Bien Hoa .....	4,361	1,064,000
Giadinh .....	2,763	1,054,012
Tay Ninh .....	1,306	431,000
Thudan Mot .....	1,472	631,000
Ile di plu-quoc.....	373	93,367
Annam et Cambodge .....	28	81,000
Other districts .....	1,000	300,000
Total .....	12,900	4,005,011

## NEW RUBBER COMPANIES IN JAPAN.

The Kamenofuchi Rubber Works, established July, 1913, at Fukae—between Kobe and Osaka—will manufacture rubber tires as well as surgical and electrical rubber goods. Mr. Kamenofuchi, the head of this concern, was formerly connected with The Alenken Rubber Works at Osaka.

The Naigai Rubber Co., established in August, 1913, at Sugawarantori, Kobe, with a capital of \$60,000, has as its purpose the manufacture of "The Prince Tire" and all other rubber goods, for domestic consumption and for export to China, the Malay states and other districts. The principal machinery for its plant has already been ordered, from David Bridge & Co., Limited, of England, and the crude rubber used by the company is to be imported from London. The manager of this enterprise is Mr. T. Ide, formerly connected with the Teat Co., Limited, of Kobe; its representative is Mr. J. Enami, and the expert is Mr. W. A. Wep, an Englishman.

Mr. U. Inokuchi, employed for some time past by the Sugii Rubber Works, but retired from that connection in July, 1913, when this concern became known as The Chiyoda Rubber Co., Limited (capital \$300,000), has become associated with the Kobe Rubber Manufacturing Co. at Kobe, it being his intention to familiarize himself with the foreign methods of rubber manufacture—which he believes he can do more readily in this way, from the English experts employed by this concern, than by going abroad. Mr. Inokuchi is a Bachelor of Engineering of the Tokio Imperial University.

## ENTRIES FOR THE BATAVIA EXHIBITION CLOSE NOVEMBER FIRST.

As already announced, an International Rubber Exposition will be held at Batavia, Java, September 8, 9 and 10, 1914. Applications for space, stating the area required, must be addressed to the General Secretary of the Congress and Exposition, not later than November 1, 1913. The Dutch East Indian Government will admit, free of duty, all articles destined for the exhibition, which will cover, in addition to the rubber industry as practised in various countries, the different methods of cultivating rubber and preparing the product, with a special division devoted to rubber obtained from wild sources.

## Some Rubber Planting Notes.

### REDUCING THE PRODUCTION OF PLANTATION RUBBER.

WITH reference to the proposal for meeting present conditions by a reduced production of plantation rubber, the "Financier," of London, makes the following suggestion: "It is admitted that the situation now prevailing in the commodity is abnormal—that it has been brought about by other than natural means. Surely, then, what is termed artificial assistance is justifiable as a remedy. The only way to circumvent a bear raid in plantation rubber is to cut short the supply, and thus inaugurate a bull movement. This could easily be done by agreement amongst the larger producing companies to cease tapping. A fortnight of non-production would be quite sufficient. The sentimental effect of the decision would be far greater than the influence of the reduced output. The bears would certainly be caught, and the price of plantation rubber might conceivably revert to its normal level."

Referring to the question of reducing plantation production, the "Frankfurter Zeitung," a leading German daily, remarks that many plantation owners are said to be in a precarious situation, the formation of companies having taken place for the greatest part when the prices of rubber had reached an exceptional height. The prospects of these undertakings were estimated on a considerably higher level of prices than at present exists.

### SOCIETE ANONYME DES PLANTATIONS DE TELOK-DALAM (FEDERATED MALAY STATES).

An increase in the number of trees is recorded, from 29,694 in January, 1912, to 60,688 at the end of that year. During the twelve months the yield was 90,986 pounds, the estimate having thus been exceeded by about 30,000 pounds. The output anticipated for 1913 is 176,000 pounds. This is a Belgian company, with headquarters in Antwerp.

### SUNGEI KAPAR LOWERS COSTS.

The Sungei Kapar Rubber Co., Limited (Federated Malay States), has lowered the cost of putting its product on the market from 1s. 2.40 d. for 1911 to 1s. 0.51d. for 1912. Output increased from 338,480 pounds in the earlier to 466,271 pounds in the later year.

### SIALANG RUBBER ESTATES, LIMITED.

According to a report issued by Harrisons & Crosfield, Limited, London, the crop of rubber harvested on the above company's estates for six months ended July 31, 1913, was approximately 126,092 pounds, of which, up to the date of the report (August 19) 65,041 pounds had been sold at a gross average of 3s. 6.85d. per pound.

### ANGLO-MALAY RUBBER CO., LIMITED.

The crop of rubber harvested on the above company's estates for seven months ended July 31, 1913, according to a report sent out by Harrisons & Crosfield, Limited, amounted to 723,232 pounds, of which 388,379 pounds have been sold at an average gross price of 3s. 3.65d. per pound.

### RUBBER SHIPMENTS FROM STRAITS SETTLEMENTS.

A cablegram to the Malay States Information Agency, London, from the Colonial secretary, Singapore, gives the exports of rubber from Straits Settlements ports during the month of August, as 2,946,400 pounds, compared with 2,509,333 pounds in July and 1,828,133 pounds in June. These figures include transshipments from adjacent places, such as Borneo, Java Sumatra and the Non-Federated Malay States, as well as rubber actually furnished for export by the colony, but does not include rubber shipments from the Federal Malay States.

### A COLLEGE OF TROPICAL AGRICULTURE FOR CEYLON.

According to an address delivered recently by the Director of Agriculture of Ceylon, the movement in favor of the establishment on that island of a College of Tropical Agriculture, is making favorable progress. Designs have been prepared for the three main buildings which will generally resemble those of the agricultural college at Cornell University, Ithaca, New York, and a site selected on high ground on the bank of the Mahaweli Gango, Ceylon's largest river, opposite the Royal Botanic Gardens at Peradeniya.

According to present plans, the main buildings, which are to cost about \$200,000, will include laboratories, a central auditorium, library and museum, and dormitories for resident students. The chief subjects to be taught will be agriculture, chemistry, soil bacteriology, botany, mycology, zoology, entomology, horticulture, irrigation, veterinary science, physics, land-surveying, mechanics, meteorology and bookkeeping. Work on the plantations outside will be a special feature of the course, which is expected to take a year for men with degrees in agriculture desiring to specialize in tropical agriculture, and at least two years for less advanced students. It is also proposed to receive non-resident students.

### RUBBER PROFITS RECOUPING LOSSES ON TEA.

The Doranakande Rubber Estates, Ceylon, report that the whole of their trees are in bearing, the output (of about 55,000 pounds) having been produced at a cost f. o. b. Colombo of less than 1s. per pound, or exclusive of manuring, under 8½d. In view of the tea crop having been sold at a loss, the company proposes to do away with that branch of its production, confining itself to rubber.

### THE RUBBER PRODUCTION OF BURMA.

The growing importance of Burma in rubber cultivation is indicated by recent statistics from Consul Maxwell T. Moorhead, of Rangoon. Total exports to all countries except India represented in 1911 \$188,731, and in 1912 \$493,095. The United States' share was, however, trifling, having been in 1911 nil, and in 1912 \$399. Estimates of the area under rubber are: 1911, 20,100 acres, and 1912, 32,772 acres, a prospective increase of yield being thus indicated.

Imports of Burma in rubber goods, apart from clothing, were:

	1911.	1912.
Total .....	\$40,845	\$63,607
Includ- { United States .....	4,172	1,973
ing { United Kingdom .....	.....	46,520

### RUBBER GROWING IN MALABAR.

A correspondent of "Capital," of Calcutta, invites attention to the growing importance of the rubber industry in Southern India, there being no less than 35,000 acres of land under rubber in the Malabar district alone. An enterprising grower is said to be arranging with a native landowner for the purchase of a whole hill in South Malabar, containing several thousand acres, to be mainly devoted to rubber. The writer claims that Malabar rubber equals that of Ceylon in quality and yield, while the prices obtained compare favorably with those of any other rubber in the market.

### RUBBER FROM BRITISH HONDURAS.

Exports of rubber to the United States from British Honduras were as follows: 1911, \$16,382; 1912, \$18,735.

## THE QUALITY OF PLANTATION RUBBER.

THE following comments on the above subject are extracted from a recent issue of the *Bulletin du Caoutchouc et de la Bourse*.

During the past year undeniable progress has been made in the preparation of plantation rubber. There is no longer a doubt that the most carefully prepared kinds combine all the physical properties of raw rubber of the highest quality.

Manufacturers show a marked preference for smoked sheet and crepe. At the beginning of 1912, crepe was in largest demand, but since then, smoked sheet of premier quality being less plentiful, the demand has turned mainly to this article, which led at the bi-monthly sales in London. Until then, the greater portion of the crop was shipped in the form of crepe; but the premium paid for smoked sheet has inevitably increased its production, and in all probability the prices of these two varieties will eventually be equalized.

The preparation of smoked sheet, which takes longer and is a more delicate operation than the production of crepe, was a disadvantage, because the smoking and the drying, the two principal operations, had to be conducted very carefully, so that rubber shipped in this form would not arrive in a state making its use impossible.

A new process of smoking obviates all these difficulties and it is anticipated that the smoked sheet, which is undoubtedly the better type, will be more plentiful on the market. The improvement effected in the preparation of brown crepe and of scrap by exposure to the winds, and by the removal of the impurities that have formerly reduced their value, has been frequently remarked.

It is evident that the epoch of groping is at an end and manufacturers will not fail to appreciate the uniformity in the quality of the product that will be delivered to them.

## COAGULATING TANKS.

EXCELLENT results have attended the introduction in Malaya of coagulating tanks, which appear to possess advantages not always obtained by the usual method of coagulating with trays. The tank is a large, shallow receptacle, into which the fresh latex is poured. The first tanks used in Malaya were made with a glazed tile lining, but good results have also been obtained with wood lining when sufficiently smooth. In the bed of the tank are grooves, with intervening spaces equalling the breadth required for the strips of coagulated rubber, for convenience in putting through the crêping machines. When the latex has been standing some time, but before it begins to harden, wooden partitions are pushed into the grooves, so that the tank becomes a series of separate chambers, from which the solidified latex can be taken in strips of the exact size required.

Uniformity of treatment is insured by this method, the coagulation of a large quantity of latex being effected at one time, under precisely similar conditions, and with an equal distribution of acetic acid.

According to a description in the "Malay Mail" of the tank being used on the Sungei Tua Estate, it is about 6 inches deep by about 10 feet long and 3 feet broad. It is filled with fresh latex, and the acids used in the coagulation are added. After the parallel partitions are put in, a wooden cover is placed on the top, which is not removed till the next morning, when the strips of coagulated rubber, reduced to a thickness of about  $2\frac{1}{2}$  inches, are taken out. They are then ready to be passed through the machines preparatory to being smoked, except that they have first to be further reduced in thickness through being trodden out by coolies.

Should be on every rubber man's desk—The Rubber Trade Directory of the World, 1912.

## RUBBER IN THE FRENCH CONGO.

AN interesting account of the rubber resources of Central Africa is given in a recent number of *Annales de L'Institut Colonial de Bordeaux*, from which we extract the following on the subject of rubber culture in French Equatorial Africa:

In this zone, known botanically as the Soudanese zone, lianas such as the *Landolphia owariensis* and *Landolphia Heudelotti* (from the coast of N'Dellé) are utilized. They shoot up especially in the neighborhood of the rivers and in the less wooded places and those preserved from brush fires. But where the forest does not exist, or where the spontaneous vegetation is destroyed by fire, the liana cannot exist under its customary vegetative conditions; it is transformed and appears only as woody tufts. The aerial organs are destroyed every year, but the underground parts are abnormally developed and produce rhizomes gorged with latex. These plants, described for the first time by M. A. Chevalier, at the time of his mission in Central Africa, were not then utilized. The natives had few wants and the administration required but little of them. The few baskets of rubber they brought in, either to the factors, or in payment of taxes, were obtained by tapping the liana. But since 1903 things have changed; traffic has developed, owing to the arrival of many free merchants, and the contribution has gradually increased to several hundred thousand francs, representing each year, 150 to 200 tons of rubber. The section that furnished 3 or 4 tons in two or three years has increased its output tenfold, not only on account of paying tribute in produce, but because the natives are beginning to buy merchandise, such as salt, beads, knives, etc. There is no doubt that if the stations were better stocked and sold cheaper, their business and consequently offerings of rubber would increase—that is, if the business were conducted in exchange, and not in cash.

The establishment of plantations, under conditions to be determined, would be the best means of assuring to the country the conservation of the sole product of value that it can furnish. There has already been obtained, under favorable conditions, a rapid multiplication of spontaneously growing plants, but this does not appear to be the solution; it is the cultivation of trees to which recourse should be had. Experiments covering a considerable area and with different varieties have already been made, which should serve as a basis for the establishment of plantations.

## REDUCING FREIGHT CHARGES ON CONGO RUBBER.

In view of the critical condition of the rubber market a reduction in the cost of transportation of rubber has been made in the Belgian Congo. The Congo Railway, with the consent of the Belgian government, reduced the cost of transporting rubber between Stanley-Pool and Matadi, from 1 franc 75c., to 35c. per kilometer ton, after July 1. The Citas Company has likewise met the demands of exporters as to the cost of transportation on the Congo River and its tributaries. Since August 1, the cost of carrying rubber from Stanleyville or Parnia-Matumbo (Sankuru) and Kinshassa, has been reduced from 120 francs to 84 francs per ton. An equivalent reduction has been made in transportation charges from other points, but Belgian commercial circles do not consider the reductions important enough to afford relief to the Belgian rubber exporting industry, tho a recent decree of the colonial minister, by which the export duty on rubber is practically abolished, will, it is expected, contribute materially to this effect.

## BUKIT RAJAH RUBBER CO., LTD. (FEDERATED MALAY STATES).

This company's output for the year ending March 31 last amounted to 618,374 pounds, against 567,214 pounds for the preceding annual period. For the current year the managers estimate the yield as 640,000 pounds.

## RUBBER CULTIVATION IN NIGERIA.

Mr. Frank Evans, formerly connected with the English Botanical Gardens at Trinidad, but during the last year acting as director of agriculture at Onitsha, Central Province, Nigeria, left on the 10th of August on a leave of absence to cover several months, and may possibly visit America before returning to his duties in Africa. In his latest annual report on the agricultural department he has this interesting paragraph on rubber: "Rubber under cultivation in this country is confined chiefly to *Hevea Brasiliensis* (Pará) and *Manihot Glaziovii* (Ceara), while *Funtumia elastica* and several species of *Landolphia* and *Ficus* are indigenous and occur in fairly large quantities in various parts of the Protectorate. The moist zone is eminently suitable for the growth of *Hevea Brasiliensis*, and should its cultivation be seriously taken up there is no doubt that Southern Nigeria would take a foremost place as a rubber producing country. Two twenty-year-old trees experimentally tapped at Ebute Metta yielded an average of 7 pounds 4¼ ounces dry rubber during 1912."

## RUBBER CULTIVATION IN PAPUA.

THE island of Papua, or New Guinea, includes Dutch New Guinea in the western section, German New Guinea in the north-eastern portion, and British New Guinea in the southeastern part. According to the "Handbook of the Territory of Papua," compiled by the Hon. Staniforth Smith, administrator, the British possessions in the island are 800 miles from east to west, and 200 miles from north to south, the total area of the mainland being 87,786 square miles, while the adjacent islands represent 2,754 square miles. The total coastline of the territory has been estimated as 3,664 miles, of which 1,936 belong to the islands between Papua and Queensland. The island is watered by large rivers, navigable for many miles inland by small vessels and steam launches.

According to the "Handbook" the total area planted in rubber on March 31, 1909, was 1,702 acres. Rubber exports have been as follows: 1905-6, \$5,725; 1906-7, \$6,925; 1907-8, \$2,415.

The opinion is expressed that there is no country better suited for rubber growing than Papua, possessing, as it does, an immense area of easily accessible virgin forest and scrub land lying along the coast, as well as equally good land—tho at present less accessible—lying further inland. The rainfall is heavy and evenly distributed, while the labor supply is good and apparently plentiful.

Papua is outside the range of hurricanes, which occasionally ravage the southern part of the Western Pacific and North Queensland.

## CEARA RUBBER IN THE SUDAN.

EXPERIMENTS were lately carried out by the Imperial Institute, London, with a specimen of Ceará rubber from the Sudan. The sample was a light brown sheet rubber, with good elasticity and tenacity, the analysis showing 82.7 per cent caoutchouc, 1.7 per cent. moisture, 6.4 per cent. resin, 7.8 per cent. protein and 1.4 per cent. ash. It had been excellently prepared and was in very good condition. The rubber it represented was sold at one penny above the price for fine hard Pará at the time.

In view of this favorable report, interest attaches to the statement of Mr. D. S. Corlett, the new superintendent of the Experiment Station, Peradeniya, Ceylon, (who has lately come from the Sudan), that the Forest Department of the Sudan started the cultivation of the common Ceará (*Manihot Glaziovii*) as an experiment, to see if it would do well in that country. They opened about five stations in different parts of the Upper Nile, each plot being about 100 acres in extent. Ceará requires a well-drained soil, whether sand or loam, and the experimental stations proved a failure. Mr. Corlett attributed this fact to the Sudan being too marshy for this particular rubber.

## RUBBER IN GERMAN EAST AFRICA.

ENGLISH consular statistics show that a remarkable development has taken place in the cultivation of rubber during late years in German East Africa. Eight rubber plantations passed into the hands of British companies at high prices, the total capital representing about \$6,000,000.

The value of plantation rubber exported from the Protectorate rose to its highest point in 1910, owing to the artificially high price then current. At that time there were 248 plantations, with a cultivated area of 63,990 acres and 20,558,965 trees.

Practically all the rubber planted is *Manihot Glaziovii*, which, it is said, can be tapped at the age of three years; the other varieties planted, such as *Kickxia*, *Hevea Brasiliensis* and *Ficus Elastica*, being mostly by way of experiment.

The value of shipments of plantation rubber in recent years is shown as follows: 1908, \$103,990; 1909, \$279,435; 1910, \$822,985; 1911, \$901,570. In 1911, Germany took 70 per cent., and the United Kingdom the bulk of the remainder.

It is added that no entirely satisfactory method of tapping has yet been discovered, most planters having returned to the system of collecting the rubber by regular series of shallow incisions. The latex is coagulated by an acid solution on the tree, and afterwards collected by hand. There are, however, machines at Muhesa, Mombo and Tanga for cleaning the rubber, rolling and drying it, until it assumes the form known on the market as crêpe.

## WILD RUBBER.

Only this class of rubber is collected by native labor. The fall in price in 1908 led to a diminution of exports, collection being to a great extent abandoned for the time. When the "boom" of 1910 ensued, the natives again became very active, but when prices dropped to a normal level their diligence relaxed.

In many districts the natives only take up wild rubber collection as a last resort for meeting their taxes.

In 1910 the exports of wild rubber from German East Africa were about 670,000 pounds, value \$725,735; while in 1911 they were only about 344,000 pounds, worth \$293,755. This reduction was partly occasioned by the fall in prices, and partly by the fact that the 1910 figures had included some rubber in transit from the Congo, which did not figure in the returns for the later year.

## RUBBER IN TROPICAL AFRICA.

Discussing this subject in the "Agriculture Tropicale," M. Aug. Chevalier states that the annual production of rubber in tropical Africa has been stationary for a number of years, being about 15,000 tons annually. All this, except a few hundred tons produced in German East Africa, is gathered from forest trees of natural growth. The intensive exploitation of the trees in many districts has led to reduced export from a number of colonies.

M. Chevalier expresses the opinion that there are no further reserves of rubber likely to be found in tropical Africa.

## REDUCED PROFITS OF AFRICAN RUBBER.

At the recent London meeting of the Eastern International Rubber and Produce Trust, Mr. W. F. de Bois Maclaren, the chairman, stated that the profits of African wild rubber producing companies have already vanished. The total cost of producing the rubber is given as equalling 72 cents per pound, while the average price lately realized has been about 50 cents. In view of the increasing supply of pure plantation rubber, he considered the outlook of African rubber anything but bright.

Replete with information for rubber manufacturers—Mr. Pearson's "Crude Rubber and Compounding Ingredients."

## Recent Patents Relating to Rubber.

### UNITED STATES OF AMERICA.

ISSUED AUGUST 5, 1913.

- N**O. 1,069,099. Suspender for socks. F. Barth, Barmen, Germany.  
 1,069,109. Automobile wheel. F. A. Buse, Polson, Mont.  
 1,069,137. Antiskidding attachment to auto wheels. E. E. Hosmer, East Lynn, Mass.  
 1,069,239. Pneumatic tire. R. and R. Ehle, Council Bluffs, Iowa.  
 1,069,281. Diving apparatus for marine exploration and the like. W. J. O'Connor, Newark, N. J.  
 1,069,313. Demountable tire rim. B. C. Ball and L. E. Younie, Portland, Ore.  
 1,069,342. Drying machine. J. H. Lorimer, assignor to W. S. Lorimer, both of Philadelphia, Pa.  
 1,069,349. Demountable rim. F. and N. M. Spranger, Detroit, Mich.  
 1,069,356. Hand stamp. M. Tilden, Los Angeles, Cal.  
 1,069,365. Pneumatic tire. B. W. Wittenberg, Riga, Russia.  
 1,069,452. Punctureless spring tire. D. W. Martin, Washington Court-House, Ohio.  
 1,069,553. Resilient wheel. J. H. W. Kepler, Preble County, near Eaton, Ohio.  
 1,069,630. Vehicle tire. W. C. Sneyd, Sale, England.  
 1,069,638. Tender hose coupling. C. B. Baker, St. Louis, Mo.

#### Designs.

- 44,436. Rubber brush. O. Eick, St. Louis, Mo.  
 44,437. Rubber Brush. O. Eick, St. Louis, Mo.

ISSUED AUGUST 12, 1913.

- 1,069,662. Parachute launching device. D. W. Adams, Glendale Springs, N. C.  
 1,069,686. Spring wheel. J. E. Fisher and T. M. Andrews, Nashville, Tenn.  
 1,069,691. Life preserver. C. A. E. Hansen, Sabine, Tex.  
 1,069,732. Medicine dropper. L. P. Savage, LaPorte, Ind.  
 1,069,750. Force pump. W. J. Williams and J. C. Bowman, Chicago, Ill.  
 1,069,778. Spring tire. H. M. Frank, Pulaaki, Iowa.  
 1,069,781. Advertising device. M. H. Harris, New York.  
 1,069,814. Vibratory massage apparatus. J. Sabatino, Richmond Hill, N. Y.  
 1,069,852. Garter. H. L. Carpenter, Minneapolis, Minn.  
 1,069,868. Band printing stamp. C. S. Ellis, Chicago, Ill.  
 1,069,885. Tire chain. F. P. Larson, Plainview, Neb.  
 1,069,904. Fire hose connection. W. E. Sanders, Brownville, N. Y.  
 1,069,951. Caoutchouc substance and process of making same. F. Hofmann and C. Coutelle, assignors to Farbenfabriken vorm. Friedr. Bayer & Co., both of Elberfeld, Germany.  
 1,070,041. Elastic fabric. W. Kops, assignor to Kops Bros., New York.  
 1,070,183. Elastic tire for vehicles. M. D. Rucker, Purley, England.  
 1,070,250. Pocket garter. M. J. Hamburger, Bayport, N. Y.  
 1,070,258. Production of caoutchouc substances. F. Hofmann and C. Coutelle, assignors to Farbenfabriken vorm. Friedr. Bayer & Co., both of Elberfeld, Germany.  
 1,070,259. Process of producing caoutchouc-like substances. F. Hofmann and C. Coutelle, assignors to Farbenfabriken vorm. Friedr. Bayer & Co., both of Elberfeld, Germany.  
 1,070,339. Tree-tapping apparatus. G. M. von Hassel, New York.

#### Reissue.

- 13,606. Elastic fabric or webbing. C. J. White, assignor to C. J. White Mfg. Co., both of New Britain, Conn.

#### Trade Mark.

- 63,100. The Black Mfg. Co., Seattle, Wash. The words *Black Bear Brand*. Waterproof outer garments, etc.

ISSUED AUGUST 19, 1913.

- 1,070,395. Garment supporter. E. L. Bradford, Takoma Park, D. C.  
 1,070,422. Toy balloon. F. J. Creque, Cuyahoga Falls, Ohio.  
 1,070,430. Baby comforter. J. L. Dunn, Albany, N. Y.  
 1,070,440. Reversible tire tread. C. F. Fisk, Allentown, N. J.  
 1,070,459. Hat protector. A. Hansl, Chicago, Ill.  
 1,070,475. Tire protector. S. S. Huffman and S. A. Huffman, Youngstown, Ohio.  
 1,070,516. Separable sanitary nursing bottle. E. O'Brien, San Bernardino, Cal.  
 1,070,557. Hose supporter. L. C. Stuckenborg, Birmingham, Ala.  
 1,070,596. Composition of matter for curing punctures in pneumatic tires. G. Fuenfstueck, assignor to The S. & H. Supply and Machinery Co., both of Denver, Colo.  
 1,070,630. Vacuum cleaning nozzle for pianos. A. E. Reeves, Helena, Mont.  
 1,070,639. Life saving device. E. Topper, Kiel, Germany.  
 1,070,642. Elastic armband. C. Weaver, Pittsburgh, Pa.  
 1,070,694. Child's dress. C. Keller, Philadelphia, Pa.  
 1,070,705. Life saving suit. R. J. Lackner, New York.

- 1,070,787. Vaginal syringe. A. C. Eggers, New York.  
 1,070,821. Vehicle wheel. C. Lampre, Pittsburgh, Pa.  
 1,070,976. Shaving brush. F. J. McGuane, Chicago, Ill.

#### Reissue.

- 13,608. Device for treating cutaneous diseases. F. Rightmire, Paterson, N. J.

#### Design.

- 44,510. Tire. L. M. Barkhurst, Akron, Ohio.

#### Trade Marks.

- 70,390. J. W. Buckley Rubber Co., N. Y. The word *Invincible*. Rubber tubing, hose, etc.  
 70,394. J. W. Buckley Rubber Co., N. Y. The word *Rebus*. Rubber tubing, hose, etc.  
 71,853. Boston Rubber Co., Boston, Mass. Company's name as trade mark. Rubber coats.

ISSUED AUGUST 26, 1913.

- 1,071,015. Respirator. J. Adler, New York.  
 1,071,031. Antiskidding device for vehicles. C. W. Cramer, Scranton, Pa.  
 1,071,032. Vehicle wheel. C. W. Cramer, Scranton, Pa.  
 1,071,062. Means for controlling the flow and delivery of liquid for surgical, medicinal, and other purposes. F. W. Lambden, Chicago, Ill.  
 1,071,071. Rubber tire tread. H. L. McClaren, assignor to Racine Rubber Co.—both of Racine, Wis.  
 1,071,109. Respirator. C. Stiriz, New York.  
 1,071,113. Swimming appliance. J. R. Teters, Sunnyside, Cal.  
 1,071,124. Tire tube tester. H. E. Whitney, Cambridge, Mass., assignor to Dover Stamping & Mfg. Co., Portland, Me.  
 1,071,191. Tire for automobiles and other vehicles. B. Turgeon, Bonesteel, S. D.  
 1,071,206. Demountable tire rim for vehicle wheels. M. H. Collom, assignor to The Collom Demountable Rim Mfg. Co.—both of Denver, Col.  
 1,071,229. Elastic tire for vehicle wheels. H. P. Haas, Brussels, Belgium.  
 1,071,378. Tire saver. L. Willour, assignor to The Ashland Mfg. Co.—both of Ashland, Ohio.  
 1,071,418. Non-skidding device. H. J. Hershheim, Pleasant Prairie, Wis.  
 1,071,432. Atomizer. G. J. Kelley, Attleboro, Mass.  
 1,071,438. Tire. W. C. Kroegher, Bellevue, Pa.  
 1,071,524. Envelope closing and sealing device. D. W. Lewis, Norwood, Ohio.  
 1,071,581. Vehicle tire. T. A. Robinson, Salt Lake City, Utah.  
 1,071,595. Puncture repair plug. C. R. Terrell, assignor to Terrell Mfg. Co.—both of Montesano, Wash.  
 1,071,628. Automobile tire pump. E. S. Ryone, Bristol, R. I., assignor to Charles A. Cartirt, Providence, R. I.

#### Design.

- 44,574. Lady's rubber. W. C. Mohr, Pittsburgh, Pa.

#### Trade Marks.

- 68,693. Lee Tire & Rubber Co., Whitmarsh township, Montgomery county, Pa.  
 68,694. Lee Tire & Rubber Co., Whitmarsh township, Montgomery county, Pa.  
 70,162. "Semperit" Oesterreichisch-Amerikanische Gummiwerke Aktiengesellschaft, Vienna XIII, Austria.  
 71,881. J. W. Buckley Rubber Co., New York. The word *Wabros*. Rubber, cotton and linen hose.

[NOTE.—Printed copies of specifications of United States patents may be obtained from THE INDIA RUBBER WORLD office at 10 cents each, postpaid.]

### GREAT BRITAIN AND IRELAND.

#### PATENT SPECIFICATIONS PUBLISHED.

The number given is that assigned to the Patent at the filing of the application, which in the case of these listed below was in 1912.  
 \*Denotes Patents for American Inventions.

(ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, AUGUST 7, 1913.)

- 8,756 (1912). Vulcanizers. G. L. Pauer, Koestlerg, Vienna, Austria.  
 8,759 (1912). Means of attaching tires to rims. J. Jelley, St. Kevins, Queens Road, Coventry, England.  
 8,770 (1912). Sheath for the back portion of croquet shoes, etc. E. H. L. Evans, Mt. Vernon, Caterham Valley, Surrey, England.  
 \*8,851 (1912). Elastic fabrics with non-elastic borders. W. Kops, 16th street, New York, U. S. A.  
 8,876 (1912). Means of preserving rubber articles by treatment with terpineol, etc. C. Beyer, 53 Mainzerstrasse, Cologne, Germany.  
 8,953 (1912). Stocking protector. T. Rankine, 3 Chambers street, Edinburgh, Scotland.

- 8,992 (1912). Process of devulcanizing india-rubber by treatment with hot hydro-carbon in the presence of a metallic oxide. H. P. C. G. Debaugé, 32 Avenue Montaigne, Paris.
- 9,023 (1912). Belt and suspenders for trousers. J. G. Pahlke, 184 Rue de Courcelles, Paris.
- 9,092 (1912). Expansion facilitating coats and jackets, having a seam held together with elastic material. J. Haigh, 6 Hallfield Arcade, Manningham Lane, Bradford, England.
- 9,182 (1912). Appliance for facilitating hearing. A. von Suchorzynski, 1 Schildhornstrasse, Steglitz, near Berlin, Germany.
- 9,329 (1912). Rubber end for tone arm joint of gramophone. A. Filas, Johannestrasse, Erfurt, Germany.
- \*9,332 (1912). Wheel tire composed of helical spring imbedded in a rubber tube. J. F. Bosquett, 75 Laidlaw avenue, Jersey City, N. J., U. S. A.

(ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, AUGUST 13, 1913.)

- 9,337 (1912). Deformity appliances. E. Edwin, 39 Beauchamp Road, Clapham Junction, London, England.
- 9,364 (1912). Vehicle wheel with continuous outer rigid ring, rubber cushion and helical springs. A. T. Reid, Hyde Park Works, Springburn, and J. Riekie, 277 Nithsdale Road, Dumbreck—both in Glasgow, Scotland.
- 9,388 (1912). Flexible tooth brush for attachment to the finger. T. C. Bamfield, 22 Cornwallis Crescent, Clifton, Bristol.
- 9,446 (1912). Spring wheel with sectional rubber tire and curved metal segment. J. Wilson, Nairn street, Glasgow, Scotland.
- 9,570 (1912). Soothing test packed with rolled up rubber sheeting. W. Burton, 92 Alfreton Road, Nottingham, England.
- 9,634 (1912). Massage appliance of rubber. J. C. Johansen, 48 Welbeck street, Cavendish Square, London.
- \*9,687 (1912). Spring wheel with flexible or non-rigid rim. E. A. Finzer, R. F. D. No. 1, Box 14, Hicksville, Ohio, U. S. A.
- 9,703 (1912). Dirigible balloon. H. L. Short, A. E. Short and H. O. Short, 56 Prince of Wales' Mansions, Queen's Road, Battersea Park, London.
- 9,755 (1912). Railway vehicle buffer spring. J. G. Robinson, Boothdale, Fairfield, near Manchester, England.

(ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, AUGUST 20, 1913.)

- 9,817 (1912). Rubber lined boots, etc. J. M. Macintosh, Woolhampton, Berkshire, England.
- \*9,860 (1912). Spring wheel with rigid outer rim and pneumatic rubber rim and cushions. H. J. Sewell, 304 Telegraph Buildings, Detroit, Mich., U. S. A.
- 9,963 (1912). Cover for wheel tires. G. Gerli, 36 Via Aleardi, Milan, Italy.
- 10,015 (1912). Metal tread band for wheels secured between layers of rubber. F. H. Watkeys, 11 Bryn Terrace, Llanelly, Carmarthenshire, Wales.
- 10,103 (1912). Block tire with non-metallic elastic body and core. A. Tomlina, 21 Churton street, Pimlico, and H. N. Gray, 334 Commercial Road—both in London.
- 10,153 (1912). Non-skid wheel tire. B. W. Wittenberg, 31 Wiedendamm, Riga, Russia.
- 10,165 (1912). Vulcanite disk for medical and like syringes. G. R. Hughes, Great Hampden, Buckinghamshire, England.
- \*10,230 (1912). Wheel tire cooled by circulation of fluid. A. B. Craig, Tarkio, Mo., U. S. A.
- 10,250 (1912). India-rubber tension springs for vehicles. F. Walton, 114 Holborn, London.
- 10,353 (1912). Jacket and covers for pneumatic tires. F. Heinemann, Hubertusstrasse, Berlin-Grünwald, and W. Boehm, 39 Mommenstrasse, Charlottenburg—both in Germany.
- 10,435 (1912). Stopping for teeth. L. Filderman, 2 Rue Ross-Bonheur, Paris.
- 10,439 (1912). Tread bands for tires with attachments to rims. H. Donnelly, 49 Wilson street, Finsbury, London.

(ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, AUGUST 27, 1913.)

- 10,496 (1912). Vulcanite packing for arc lamps. F. W. E. Schuer, 10 Myddleton Square, London.
- 10,631 (1912). Damping pad for talking machine needles. H. S. Wainwright, Alfred House, Ashford, Kent, England.
- 10,634 (1912). Tire vulcanizers. A. Olier & Co., St. Remy, Clermond-Ferrand, Puy-de-Dôme, France.
- 10,683 (1912). Duplex tube wheel tire attachment to rims and tread band. F. S. Farnsworth, 84 Osborn avenue, Jesmond, Newcastle-on-Tyne, England.
- 10,744 (1912). Wheel tire with concentric spring rings embedded in rubber. R. van Driessche, 17 Rue Armand Van Campenhout, and P. Maheu, Lembeque, Belgium.
- 10,852 (1912). Casing for gramophone sound box. A. Bug, Greifwalderstrasse, Berlin.
- 10,858 (1912). Elastic webbing. J. H. B. Dawson, Dawson's Corner, Fore street avenue, London.
- 10,874 (1912). Protective ring for line throwing apparatus. S. M. Edenborough, Ray View, The Leas, Westcliff-on-Sea, Essex, England.
- 10,914 (1912). Apparatus for detecting and closing punctures in tires. F. Humphris, Barton Peveril, Eastleigh, Hampshire, England.
- 10,915 (1912). Auxiliary rim attachment carrying elastic tire for wheels. F. Humphris, Barton Peveril, Eastleigh, Hampshire, England.
- 10,919 (1912). Detachable rim attachments for wheels. F. Humphris, Barton Peveril, Eastleigh, Hampshire, England.
- 10,947 (1912). Rubber resin solutions. F. Boehm, Ltd., 16 Jewry street, and C. A. Reihl, 30 Homeleigh Road, Waverley Park—both in London.

## THE FRENCH REPUBLIC.

### PATENTS ISSUED (with Dates of Application).

- 453,881 (April 15, 1912). C. Grand. Process of extracting resinous substances contained in the wastes or residues resulting from the distillation of gums or turpentine.
- 453,927 (February 1, 1913). G. H. Simonin. Portable and automatic vulcanizing apparatus for rubber parts.
- 453,938 (February 3). E. Berille. System of elastic tires for vehicle wheels.
- 454,133 (February 10). G. Photakis. New style of pneumatic tire.
- 454,151 (February 10). Chapuis, Szoke & Katona. Protective armor and anti-skid for pneumatic tires.
- 454,271 (February 12). J. Borel and F. Grange. Improvement in rubber dancing heels.
- 454,362 (February 14). L. Bourgeois. Anti-skidding tire for vehicle wheels.
- 454,365 (February 14). A. Witzel and A. Fiderer. Process and apparatus for the manufacture of a filled rubber tire for automobile wheels.
- 454,443 (February 17). R. P. G. Buzat. Process and apparatus for recovering the benzine mixed with rubber.
- 454,444 (February 17). R. P. G. Buzat. New process and apparatus for the manufacture of non-vulcanized rubber sheets.
- 454,457 (February 17). B. H. Divine. Tire for vehicle wheels and process and apparatus for their manufacture.
- 454,514 (February 18). G. Charavet. Elastic wheel tire composed of spring shoes.
- 454,522 (February 18). R. W. Sampson. Improvement in stopping plugs for the repair of punctures in pneumatic tires and similar articles.

[NOTE.—Printed copies of specifications of French patents can be obtained from R. Bobet, Ingenieur-Conseil, 16 avenue de Villiers, Paris, at 50 cents each, postpaid.]

## THE GERMAN EMPIRE.

### PATENTS ISSUED (with Dates of Validity).

- 262,993 (March 5, 1912). Mould core for hollow rubber articles of every kind, especially for inner tubes for pneumatic tires.
- 36,040, class 39b (February 25, 1913). Process for accelerating the vulcanization of natural or artificial rubber varieties. Farbenfabriken vorm. Friedr. Bayer & Co., Leverkusen, near Cologne and Elberfeld.

## THE KINGDOM OF BELGIUM.

### PATENTS PUBLISHED.

- 256,813. Vulcanizing press. A. Lambrette, rue Saint Vincent, 43, Paris, France.
- 256,814. Improvements in vulcanizing presses, autoclaves and similar apparatus. A. Lambrette, rue Saint Vincent, 43, Paris, France.
- 256,821. Improvements in the manufacture or preparation of rubber or substances similar to rubber. F. E. Matthews, E. H. Strange and H. J. W. Bliss, 7 Staple Inn and Ingram House, Stockwell, London.
- 256,867. Process for the production of isoprene. Badische Anilin and Soda Works, Ludwigshafen on the Rhine, Germany.
- 257,092. Improved process for cementing together pieces of rubber, particularly for the repair of air tubes of pneumatic tires. A. J. A. Chatel, rue Fontainas, Brussels.

## HOW SAILORS CAN WORK UNDER WATER.

An ingenious German sea captain has invented a simple device by which a sailor can keep perfectly dry while working on the side or bottom of a ship at a considerable distance under water. The device consists of a long canvas bag—the length of it to be determined by the depth of the particular ship—cylindrical in form, except that it tapers down from a diameter at the top of two feet to a width at the bottom of one foot. The bag is kept expanded and in shape by iron rods, and heavy weights attached to the base keep it in position in the water. At the proper distance from the bottom there are three glass windows, enabling the operator in the bag to look about him in any direction. At the height of one's shoulders there are two large sleeves finished off with tight-fitting rubber wrists. The operator gets into the bottom of the bag, puts his arms through the sleeves, looking to it that the rubber cuffs fit tight enough to exclude water, and then the bag is dropped over the side of the ship and let down to the point that needs repairs, while the man works away comfortably and dry—the only part of him exposed to water being his hands.

This, of course, is not intended for use where the repairs are extensive and properly call for dry-docking, but it would serve very well where the needed repairs are slight and can be accomplished under the water.

## Report of the Crude Rubber Market.

AT the beginning of the past month the crude rubber market was quiet, business being confined to small jobbing lots which changed hands at prices within current quotations. Owing to the small supply on hand quotations were only nominal, but prices showed a slight recovery from the low figures quoted last month, August having closed with up-river fine at 89 to 90 cents, Islands fine at 75 to 76 cents.

There was no such improvement in the demand as the long continued season of hand-to-mouth buying on the part of consumers seemed to promise. The rising tendency brought a few of them into the market, but with futures still offering at a liberal discount, their enthusiasm was checked and they were but limited buyers; but the fact that offerings were small kept the market reasonably steady.

The continued indifference of buyers, however, brought about an easier tendency on the part of holders, which reports of a slight falling off in foreign quotations encouraged; and under these influences up-river fine went down to 84 cents, and Islands fine to 71 cents. The decline was followed by a decided manifestation of interest on the part of buyers and several small lots changed hands at these figures, which remained in force for several days, but on a quiet market. The decline prompted a suggestion that producers temporarily curtail their output in order to force prices to a higher level, prevailing figures leaving little profit for the planter.

In London, the September market opened with some irregularity, Brazilians displaying an upward tendency, while plantation grades went down. Business, however, remained quiet and steady, altho the reported existence of a large short interest in plantation grades was regarded as a forecast of a possible increase in demand. At the first of the fortnightly auctions of plantation rubber, there was but little competition, and only unimportant changes in prices, which ruled low; first latex pale crepe bringing 2s. 6½d.; fair to fine smoked sheets, 2s. 9½d.; clean brown crepe, 2s. 3½d.; pale gristly, 2s. 7d., and unsmoked sheets and biscuits, 2s. 6½d.

Prices for up-river fine and plantation crepe at the closing, as given in this publication for the past five months, with the difference in price between these two grades of rubber, are shown in the following table:

	Up-river Fine.	Plantation.	Difference.
April 26 .....	3s. 4½d.	3s. 2½d.	2d.
May 26 .....	3s. 8½d.	3s. 2½d.	6d.
June 25 .....	3s. 8½d.	2s. 11d.	9½d.
July 26 .....	3s. 7d.	2s. 9½d.	9½d.
August 27 .....	3s. 9½d.	2s. 8d.	1s. 1½d.
September 25 .....	3s. 7½d.	2s. 4d.	1s. 3½d.

**Scrap.**—Light demand and moderate stocks, with steady prices, describes the condition of the home market, which is featureless. Foreign scrap is in scant supply abroad and prices strong on a firm market.

### NEW YORK QUOTATIONS.

FOLLOWING are the quotations at New York one year ago, one month ago, and September 30—the current date:

PARA.	Oct. 1, '12.	Sept. 1, '13.	Sept. 30, '13
Islands, fine, new.....	106@107	77@78	71@72
Islands, fine, old.....	109@110	.....	.....
Upriver, fine, new.....	109@110	88@89	80@82
Upriver, fine, old.....	118@119	92@	85@86
Islands, coarse, new.....	55@ 56	29@30	29@30
Islands, coarse, old.....	.....	.....	.....
Upriver, coarse, new.....	84@ 85	51@52	48@49
Upriver, coarse, old.....	.....	.....	.....
Cametá .....	59@ 60	37@38	36@37
Caucho (Peruvian) ball....	84@ 85	50@51	48@49
Caucho (Peruvian) sheet...	.....	.....	.....

### PLANTATION CEYLONS.

Fine smoked sheet.....	114@115	70@72	60@61
Fine pale crepe.....	107@108	67@68	52@54
Fine sheets and biscuits....	108@109	65@66	51@53

### CENTRALS.

Emeralda, sausage .....	82@ 83	50@51	40@42
Guayaquil, strip .....	.....	none here	.....
Nicaragua, scrap .....	81@ 82	50@51	40@41
Panama .....	.....	none here	.....
Mexican plantation, sheet...	.....	none here	.....
Mexican, scrap .....	80@ 81	48@49	40@42
Mexican, slab .....	.....	none here	.....
Mangabeira, sheet .....	.....	.....	.....
Guayule .....	58@ 59	.....	.....
Balata, sheet .....	85@ 86	70@71	66@67
Balata, block .....	56@ 57	50@51	45@46

### AFRICAN.

Lopori, ball, prime.....	107@108	58@	50@
Lopori, strip, prime.....	.....	.....	.....
Aruwimi .....	100@101	45@47	40@42
Upper Congo, ball red.....	104@105	56@58	45@46
Ikelemba .....	.....	.....	.....
Sierra Leone, 1st quality....	93@ 94	53@54	45@46
Massai, red .....	95@ 96	.....	.....
Soudan Niggers .....	.....	.....	.....
Cameroon, ball .....	70@ 71	38@43	35@40
Benguela .....	74@ 75	.....	.....
Madagascar, pinky .....	.....	.....	.....
Accra, flake .....	26@ 27	.....	.....

### EAST INDIAN.

Assam .....	.....	none here	.....
Pontianak .....	6½@6¾	6¼@6½	6@6¼
Borneo .....	.....	none here	.....

### New York.

In regard to the financial situation, Albert B. Beers (broker in crude rubber and commercial paper, No. 68 William street, New York) advises as follows: "There has not been much improvement in the market for commercial paper during September from the conditions prevailing in August, the demand continuing light and principally from out-of-town banks, with rates ruling at 6 per cent. for the best rubber names and 6¼@6½ per cent for those not so well known."

### NEW YORK PRICES FOR AUGUST. (New Rubber.)

	1913.	1912.	1911.
Upriver, fine .....	\$0.84@0.94	\$1.16@1.23	\$1.09@1.17
Upriver, coarse .....	.51@ .53	.89@ .96	.95@ .99
Islands, fine .....	.74@ .81	1.06@1.13	1.02@1.09
Islands, coarse .....	.29@ .33	.56@ .59	.61@ .63
Cametá .....	.38@ .41	.64@ .68	.66@ .68

**Statistics Para India Rubber (in Tons Including Caucho).**

STATISTICS FOR THE MONTH OF AUGUST.

	1913.	1912.	1911.	1910.
Receipts at Pará.....	Pará. Cauch. Tons.	Tons.	Tons.	Tons.
Shipments to Liverpool..	1,400 200 = 1,600	against 1,900	1,590	1,870
Shipments to Continental Ports .....	520 130 = 690	" 970	940	710
Shipments to America....	200 50 = 250	" 250	240	270
American Imports .....	820 230 = 1,050	" 1,540	1,020	830
American Deliveries .....	910 310 = 1,220	" 1,320	1,280	800
Liverpool Imports .....	900 300 = 1,200	" 1,270	1,210	860
Liverpool Deliveries .....	491 201 = 692	" 915	1,138	719
Continental Imports .....	742 281 = 1,023	" 1,335	1,498	499
Continental Deliveries ..	110 170 = 280	" 290	170	170
	120 170 = 290	" 340	190	170

**VISIBLE SUPPLY—1st SEPTEMBER, 1913.**

	1913.	1912.	1911.	1910.
Stock in England, Pará 1st hands.....	Pará. Cauch. 704	730	3,150	1,018
Pará, 2nd hands.....	50			254
Caucho .....	454	320	630	670
Stock in Pará, 1st hands.....	450	110	170	330
2nd hands .....	190	10	250	320
Syndicate .....	810	1,260	2,620	
Stock in America .....	170	50	180	400
Stock on Continent .....		130	70	40
Afloat—Europe .....	420	60	730	610
Afloat—America .....	200	40	570	250
	2,994	854		

Total Visible Supply, including Caucho. 3,848 4,250 8,350 4,022

**CROP STATISTICS—30th JUNE, 31st AUGUST, 1913.**

	1913.	1912.	1911.	1910.
Pará Receipts.....	Pará. Cauch. 1912 3,110 730	3,720	3,840	3,010
Pará Shipments to Europe.....	1,280 570	1,850	2,540	2,330
Pará Shipments to America.....	1,510 490	2,000	2,710	1,930
England Landings, net.....	1,408	2,176	1,877	1,972
England Deliveries, net .....	2,013	2,496	3,197	2,043
America Landings, net .....	2,410	2,480	2,600	1,570
America Deliveries, net .....	2,370	2,470	2,500	1,460
Continental Imports, net .....	340	770	310	340
Continental Deliveries, net .....	460	800	380	340

**POSITION—1st SEPTEMBER, 1913.**

Decrease in Receipts during August, 1913, against August, 1912.....	300
Decrease in Receipts—New Crop, July/August, 1913, against 1912.....	120
Decrease in Deliveries—New Crop, July/August, 1913, England and Continent, against 1912.....	723
Decrease in Deliveries—New Crop, July/August, 1913, America, against 1912 .....	100
Decrease in Visible Supply Pará Grades, against 1st September last year 402	
Increase in Stock, England, August 31, 1913, against August 31, 1912..	158

WM. WRIGHT &amp; CO., Brokers.

Liverpool, 3rd September, 1913.

During the month 210 tons have been shipped from Europe to America.

**Rubber Scrap Prices.**

LATE NEW YORK QUOTATIONS.—Prices paid by consumers for carload lots, per pound.

	Sept. 27, '13.
Old rubber boots and shoes—domestic.....	8¼@ 9
Old rubber boots and shoes—foreign.....	8¼@ 8¾
Pneumatic bicycle tires .....	5 @ 5½
Automobile tires .....	8½@ 8½
Solid rubber wagon and carriage tires.....	8¼@ 8½
White trimmed rubber.....	10½@ 10¾
Heavy black rubber .....	4½@ 4½
Air brake hose .....	4½
Garden hose .....	1 @ 1¼
Fire and large hose .....	2 @ 2½
Matting .....	¾@ ¾
No. 1 white auto tires.....	9½@ 9½
Foreign auto tires .....	7½@ 7½

**WEEKLY MOVEMENT OF LONDON PRICES FOR FINE PARA, 1913.**

[IN SHILLINGS AND PENCE PER POUND.]

January 3, 1913.....	4/7½	May 16.....	3/10
January 10 .....	4/6½	May 23.....	3/9
January 17 .....	4/6½	May 31.....	3/8½
January 24 .....	4/5¼	June 6.....	3/9¼
January 31.....	4/4	June 13.....	3/9
February 7 .....	4/2¾	June 20.....	3/8¾
February 14.....	4/3	June 27.....	3/9½
February 21.....	4/0½	July 4.....	3/9¾
February 28.....	4/0½	July 11.....	3/9
March 7 .....	3/10¾	July 18.....	3/9½
March 14.....	3/11¼	July 25.....	3/8
March 20.....	3/11	August 1.....	3/8½
March 28.....	3/9½	August 8.....	3/10
April 4.....	3/6¼	August 15.....	3/10½
April 11.....	3/4½	August 22.....	3/10
April 18.....	3/4¾	August 29.....	3/8½
April 25.....	3/4½	September 5.....	3/9
May 2.....	3/5½	September 12.....	3/8
May 9.....	3/8¾		

**Liverpool.**

WILLIAM WRIGHT &amp; CO. REPORT, SEPTEMBER 1, 1913:

*Fine Pará.*—With small available stocks and a short interest, spot prices have been firm throughout the month, up to 3s. 10½d. [94 cents] paid, closing with sales at 3s. 9½d. [92 cents]. Stocks are small, and practically in the hands of a Bolivian importer. Quantities afloat and available for September are limited, so it is anticipated that prices will remain firm for that month. A fair business has been done for forward delivery at a considerable discount. With the prospects of a reduced crop one may anticipate that prices of Fine will continue to obtain a substantial premium on Plantation grades. Closing value: Hard Fine 3s. 9½d. [92 cents], September-October 3s. 4½d. [82 cents].

**Amsterdam.**

JOOSTEN AND JANSEN report [September 9]:

Altho competition was tame, the result of today's sale by inscription was satisfactory, 21,460 kilos having been sold of 25,400 kilos offered.

**Rotterdam.**

HAVELAR AND DE VRIES report [August 26]:

Sales appointed for September 9 included about 26½ tons, including 16,450 kilos *Hevea*, 7,590 kilos *Ficus*, balance *Castilloa*, Ceará and Congo.

**IMPORTS FROM PARA AT NEW YORK.**

[The Figures Indicate Weight in Pounds.]

AUGUST 25.—By the steamer *Clement* from Pará and Manaos:

	Fine.	Medium.	Coarse.	Caucho.	TOTAL.
Arnold & Zeiss.....	94,500	17,400	66,700	22,800=	201,400
General Rubber Co.....	39,600	5,600	25,300	200=	70,700
Meyer & Brown.....	68,800	7,900	32,200	79,200=	188,100
Ed. Maurer .....			22,400		22,400
Henderson & Korn.....	25,000		26,400	5,600=	57,000
H. A. Astlett.....	28,900	12,100	42,900	6,700=	90,600
Total .....	256,800	43,000	215,900	114,500=	630,200

SEPTEMBER 2.—By the steamer *Stephen* from Pará and Manaos:

Arnold & Zeiss.....	42,700	8,000	13,800	21,300=
General Rubber Co.....	57,600	8,200	56,500	300=
Meyer & Brown.....	60,000	8,300	19,500	36,800=
Henderson & Korn.....	31,800	7,800	31,000	17,500=
H. A. Astlett & Co.....	7,100	3,900	39,600	
F. Rosenstein & Co.....	6,300			
Crossman & Sielcken.....		5,600	3,800	200=
Total .....	205,500	41,800	164,200	76,100=

SEPTEMBER 15.—By the steamer *Justin* from Pará and Manaos:

Arnold & Zeiss.....	205,500	65,100	96,400	79,900=
General Rubber Co.....	158,700	26,900	27,100	2,300=
Meyer & Brown.....	6,400	18,600	29,100	36,100=
Henderson & Korn.....	32,100	3,900	35,000	3,400=
H. A. Astlett & Co.....	400		11,900	
G. Amsinck & Co.....	5,400	400	4,600	1,100=
Total .....	408,500	114,900	204,100	122,800=

**IQUITOS.**

H. A. Astlett & Co.....			8,600=	8,600
Meyer & Brown.....			22,000=	22,000
Total .....			30,600=	30,600

## PARA RUBBER VIA EUROPE.

POUNDS.		
AUGUST 25.—By the <i>Cedric</i> =Liverpool:		
Arnold & Zeiss (Fine).....	190,000	
Arnold & Zeiss (Coarse).....	30,000	
Robinson & Co. (Fine).....	11,200	
Raw Products Co. (Fine).....	13,500	244,700
AUGUST 25.—By the <i>President Lincoln</i> =Hamburg:		
Ed. Maurer (Fine).....	5,000	
Various (Coarse).....	7,000	12,000
AUGUST 25.—By the <i>Kaiserin Augusta Victoria</i> =Hamburg:		
Meyer & Brown (Coarse).....	40,000	
Wallace L. Gough (Coarse).....	8,500	
Wallace L. Gough (Fine).....	2,000	50,500
AUGUST 30.—By the <i>Baltic</i> =Liverpool:		
Arnold & Zeiss (Fine).....	45,000	
General Rubber Co. (Fine).....	112,000	
Various (Caucho).....	45,000	
Various (Fine).....	3,500	205,500
SEPTEMBER 2.—By the <i>Lapland</i> =Antwerp:		
Various (Fine).....		5,000
SEPTEMBER 4.—By the <i>Pennsylvania</i> =Hamburg:		
Rubber & Guayule Agency (Fine).....	14,000	
Various (Fine).....	7,000	21,000
SEPTEMBER 6.—By the <i>Advance</i> =Colon:		
W. R. Grace & Co. (Fine).....	9,500	
W. R. Grace & Co. (Coarse).....	6,000	
W. R. Grace & Co. (Caucho).....	7,500	
Ed. Maurer (Coarse).....	500	23,500
SEPTEMBER 11.—By the <i>Patricia</i> =Hamburg:		
Rubber & Guayule Agency (Fine).....	16,500	
Various (Fine).....	2,200	18,700
SEPTEMBER 13.—By the <i>Celtic</i> =Liverpool:		
Michelin Tire Co. (Fine).....	11,200	
Various (Fine).....	11,200	22,400

## OTHER NEW YORK ARRIVALS.

## CENTRALS.

[\*This sign, in connection with imports of Centrals, denotes Guayule rubber.]

POUNDS.		
AUGUST 23.—By the <i>Mexico</i> =Mexico:		
Hermann Kluge.....	2,000	
Harburger & Stack.....	2,000	
G. Amsinck & Co.....	600	
W. L. Wadleigh.....	800	
H. Marquardt & Co.....	200	
A. S. Lascelles.....	900	
Mecke & Co.....	200	
Various.....	3,000	9,700
AUGUST 25.—By the <i>Sarnia</i> =Frontera:		
E. Steiger & Co.....	1,000	
W. L. Wadleigh.....	3,000	4,000
AUGUST 25.—By the <i>Allemania</i> =Colombia:		
Schutte, Bunemann & Co.....		600
AUGUST 25.—By the <i>Alliance</i> =Colon:		
G. Amsinck & Co.....	9,800	
Broedermann & Litzrodt.....	700	
Wessels, Kulenkampff & Co.....	400	
Various.....	2,500	13,400
AUGUST 27.—By the <i>Prins Joachim</i> =Colombia:		
Andean Trading Co.....	3,000	
Wessels, Kulenkampff & Co.....	1,000	
Gravenhorst & Co.....	500	4,500

AUGUST 29.—By the <i>Monterey</i> =Mexico:		
E. Steiger & Co.....	2,000	
L. Johnson & Co.....	1,500	
General Export & Commission Co.....	1,000	
G. Amsinck & Co.....	700	
American Trading Co.....	500	5,700
AUGUST 29.—By the <i>Santa Marta</i> =Colon:		
R. del Castillo & Co.....	800	
Pablo Calvet & Co.....	400	1,200
AUGUST 29.—By the <i>Sibiria</i> =Frontera:		
General Export & Commission Co.....		1,000
AUGUST 29.—By the <i>Colon</i> =Colon:		
G. Amsinck & Co.....	5,000	
Stark & Co.....	1,000	
Various.....	1,000	7,000
AUGUST 30.—By the <i>Baltic</i> =Liverpool:		
Adolph Hirsch & Co.....		11,200
SEPTEMBER 2.—By the <i>Fruitera</i> =Belize:		
Eggers & Heinlein.....	300	
Broedermann & Litzrodt.....	800	1,000
SEPTEMBER 2.—By the <i>Maracaibo</i> =Maracaibo:		
G. Amsinck & Co.....	400	
Yglesias, Lobo & Co.....	300	700
SEPTEMBER 2.—By the <i>Prins Eitel Friedrich</i> =Colombia:		
Kunhardt & Co.....		2,000
SEPTEMBER 2.—By the <i>Carl Schwarz</i> =Colon:		
F. Lapiedra.....	3,000	
Lawrence Import Co.....	500	3,500
SEPTEMBER 2.—By the <i>Lapland</i> =Antwerp:		
Rubber & Guayule Agency.....		*11,200
SEPTEMBER 6.—By the <i>Siamese Prince</i> =Bahia:		
Adolph Hirsch & Co.....	47,500	
J. H. Rossbach & Bros.....	10,500	58,000
SEPTEMBER 6.—By the <i>Morro Castle</i> =Mexico:		
G. Amsinck & Co.....	1,200	
Maitland, Coppell & Co.....	1,500	
J. A. Medina & Co.....	300	
G. A. Alden & Co.....	400	3,400
SEPTEMBER 6.—By the <i>Advance</i> =Colon:		
Ed. Maurer.....		1,500
SEPTEMBER 8.—By the <i>Albion</i> =Colombia:		
Caballero & Blanco.....	1,000	
Various.....	3,000	4,000
SEPTEMBER 10.—By the <i>Prins August Wilhelm</i> =Colombia:		
Isaac Brandon & Bros.....	800	
Camacho Roldan & Van Sichel.....	400	1,200
SEPTEMBER 10.—By the <i>Trent</i> =Colon:		
A. M. Capen's Sons.....	3,000	
J. S. Sambrada & Co.....	1,500	
H. Wolff & Co.....	1,500	6,000
SEPTEMBER 12.—By the <i>Panama</i> =Colon:		
G. Amsinck & Co.....	4,500	
Harburger & Stack.....	800	
United Export Co.....	2,000	
W. R. Grace & Co.....	2,300	
Lawrence Johnson & Co.....	3,500	
Dumarest Bros. & Co.....	2,100	
Various.....	3,400	18,600
SEPTEMBER 12.—By the <i>Sarnia</i> =Frontera:		
E. Steiger & Co.....	12,000	
Hermann Kluge.....	2,000	
W. L. Wadleigh.....	1,500	
Meyer & Brown.....	1,500	17,000

SEPTEMBER 12.—By the <i>Zacapa</i> =Colombia:		
G. Amsinck & Co.....		1,000
SEPTEMBER 13.—By the <i>Esperanza</i> =Mexico:		
Hermann Kluge.....	6,000	
E. Steiger & Co.....	3,000	
Harburger & Stack.....	4,000	
Murphy & Fultz.....	1,500	
General Export & Com. Co.....	1,500	
American Trading Co.....	1,000	
Willard Hawes & Co.....	1,000	18,000
SEPTEMBER 15.—By the <i>Pr. Sigismund</i> =Colombia:		
G. Amsinck & Co.....	600	
Caballero & Blanco.....	300	
Mecke & Co.....	300	1,200
SEPTEMBER 15.—By the <i>Suriname</i> =Colombia:		
Broedermann & Sitzrodt.....		1,200
SEPTEMBER 15.—By the <i>Tenadores</i> =Port Limon:		
Isaac Brandon & Bros.....		1,000
SEPTEMBER 16.—By the <i>Emil L. Boas</i> =Colon:		
G. Amsinck & Co.....	1,500	
Andean Trading Co.....	4,000	
Neuss Hesslein & Co.....	800	
Isaac Brandon & Bros.....	700	7,000
SEPTEMBER 18.—By the <i>Santiago</i> =Tampico:		
Madero Bros., Inc.....		*11,200

## AFRICAN.

AUGUST 25.—By the <i>St. Louis</i> =Southampton:		
Arnold & Zeiss.....		11,000
AUGUST 25.—By the <i>Cedric</i> =Liverpool:		
Various.....		2,200
AUGUST 25.—By the <i>President Lincoln</i> =Hamburg:		
Meyer & Brown.....	22,200	
General Rubber Co.....	6,500	
Arnold & Zeiss.....	15,000	
Various.....	15,200	58,900
AUGUST 25.—By the <i>Kaiserin Augusta Victoria</i> =Hamburg:		
Wallace L. Gough.....	18,000	
Various.....	18,500	36,500
AUGUST 26.—By the <i>Chicago</i> =Havre:		
Meyer & Brown.....		50,000
AUGUST 26.—By the <i>Vaderland</i> =Antwerp:		
Meyer & Brown.....	4,500	
Various.....	37,000	41,500
AUGUST 26.—By the <i>St. Patrick</i> =Singapore:		
Various.....		11,000
AUGUST 30.—By the <i>Baltic</i> =Liverpool:		
Various.....		12,000
SEPTEMBER 2.—By the <i>Lapland</i> =Antwerp:		
Rubber & Guayule Agency.....		6,000
SEPTEMBER 4.—By the <i>Pennsylvania</i> =Hamburg:		
Meyer & Brown.....	5,000	
Arnold & Zeiss.....	45,000	
Rubber & Guayule Agency.....	56,500	
Various.....	16,500	123,000
SEPTEMBER 5.—By the <i>Adriatic</i> =Liverpool:		
Meyer & Brown.....	7,000	
James T. Johnstone.....	6,500	13,500
SEPTEMBER 9.—By the <i>Zeeland</i> =Antwerp:		
Various.....		2,200

SEPTEMBER 11.—By the *Patricia*=Hamburg:  
 Arnold & Zeiss..... 3,500  
 Ed. Maurer ..... 3,000  
 Rubber & Guayule Agency..... 6,000 12,500

SEPTEMBER 13.—By the *Celtic*=Liverpool:  
 Meyer & Brown..... 15,000

SEPTEMBER 15.—By the *Amerika*=Hamburg:  
 Ed. Maurer ..... 8,500

SEPTEMBER 19.—By the *Mexico*=Havre:  
 Various ..... 5,000

## EAST INDIAN.

[\*Denotes plantation rubber.]

POUNDS.

AUGUST 25.—By the *St. Louis*=Southampton:  
 Meyer & Brown..... \*42,500  
 N. Y. Commercial Co..... \*67,200  
 Arnold & Zeiss..... \*22,500  
 Robinson & Co..... \*3,500 \*135,700

AUGUST 25.—By the *Noordam*=Amsterdam:  
 Meyer & Brown..... \*23,000  
 Arnold & Zeiss..... \*16,600  
 Rubber Trading Co..... \*16,000  
 Robert Badenhop ..... \*2,200  
 Various ..... \*12,000 \*69,200

AUGUST 25.—By the *Minnetonka*=London:  
 Meyer & Brown..... \*43,000  
 Ed. Maurer ..... \*30,000  
 J. T. Johnstone..... \*33,500  
 C. T. Wilson..... \*22,500  
 Lunham & Moore..... \*22,500  
 Wallace L. Gough..... \*10,000  
 General Rubber Co..... \*145,000  
 Adolph Hirsch & Co..... \*8,500  
 L. Littlejohn & Co..... \*22,500  
 Henderson & Korn..... 500  
 Various ..... \*22,500 \*360,500

AUGUST 26.—By the *Chicago*=Havre:  
 Michelin Tire Co..... \*22,500

AUGUST 26.—By the *Vaderland*=Antwerp:  
 Meyer & Brown..... \*80,000

AUGUST 26.—By the *St. Patrick*=Singapore:  
 Ed. Maurer ..... \*78,500  
 Malaysian Rubber Co..... \*11,200  
 E. Boustead & Co..... \*5,000  
 Henderson & Korn..... \*92,500  
 L. Littlejohn & Co..... \*36,000  
 Various ..... \*32,600 \*255,800

AUGUST 27.—By the *Indrakula*=Singapore:  
 Henderson & Korn..... \*45,000  
 Malaysian Rubber Co..... \*22,500 \*67,500

AUGUST 28.—By the *Majestic*=Southampton:  
 Meyer & Brown..... \*52,500  
 Arnold & Zeiss..... \*100,000  
 Various ..... \*56,000 \*208,500

AUGUST 29.—By the *City of Delhi*=Colombo:  
 Meyer & Brown..... \*22,500  
 Ed. Maurer ..... \*45,000  
 N. Y. Commercial Co..... \*38,000  
 Various ..... \*4,500 \*110,000

AUGUST 30.—By the *Baltic*=Liverpool:  
 General Rubber Co..... \*235,000  
 Various ..... 3,500 \*238,500

SEPTEMBER 2.—By the *Minneapolis*=London:  
 Meyer & Brown..... \*21,000  
 Arnold & Zeiss..... \*67,000  
 Adolph Hirsch & Co..... \*4,500  
 James T. Johnstone..... \*6,000

C. T. Wilson..... \*2,200  
 General Rubber Co..... \*10,000  
 Rubber & Guayule Agency..... \*3,000  
 Various ..... \*3,000 \*116,700

SEPTEMBER 2.—By the *Laplant*=Antwerp:  
 Meyer & Brown ..... \*95,000  
 Arnold & Zeiss..... \*33,500  
 Rubber & Guayule Agency..... \*10,000  
 General Rubber Co..... \*22,500  
 Rubber Trading Co..... \*12,500 \*173,500

SEPTEMBER 2.—By the *Philadelphia*=Southampton:  
 Arnold & Zeiss..... \*13,500  
 Rubber Trading Co..... \*7,500  
 Raw Products Co..... \*5,500  
 Henderson & Korn..... \*4,500  
 W. Stiles ..... \*11,200  
 Meyer & Brown..... \*8,000  
 C. T. Wilson..... \*60,000  
 Various ..... \*157,000 \*267,200

SEPTEMBER 2.—By the *Ryndam*=Amsterdam:  
 Robert Badenhop ..... \*5,000

SEPTEMBER 3.—By the *Oceanic*=Southampton:  
 Meyer & Brown..... \*4,500  
 W. Stiles ..... \*3,500  
 Robinson & Co..... \*15,500  
 N. Y. Commercial Co..... \*22,500  
 Various ..... \*16,500 \*62,500

SEPTEMBER 3.—By the *Carmania*=Liverpool:  
 Various ..... \*6,000

SEPTEMBER 4.—By the *Raunfels*=Colombo:  
 Meyer & Brown..... \*117,000  
 N. Y. Commercial Co..... \*52,000  
 Ed. Maurer ..... \*9,000  
 Various ..... \*11,200 \*189,200

SEPTEMBER 5.—By the *Wray Castle*=Singapore:  
 Meyer & Brown..... \*17,000  
 Ed. Maurer ..... \*50,000  
 James T. Johnstone..... \*15,000  
 Malaysian Rubber Co..... \*22,500  
 Ed. Boustead ..... \*30,000  
 L. Littlejohn & Co..... \*11,200  
 Henderson & Korn..... \*22,500  
 Various ..... \*20,000 \*188,200

SEPTEMBER 8.—By the *New York*=Southampton:  
 Meyer & Brown..... \*17,500  
 W. Stiles ..... \*3,500  
 Robinson & Co..... \*11,200  
 Rubber Trading Co..... \*7,000  
 Raw Product Co..... \*1,500  
 New York Commercial Co..... \*20,000  
 Arnold & Zeiss..... \*33,500  
 C. T. Wilson..... \*56,000  
 Goodyear Tire & Rubber Co..... \*35,000  
 Ed. Maurer ..... \*3,500 \*188,700

SEPTEMBER 8.—By the *Rotterdam*=Amsterdam:  
 Manhattan Rubber Mfg. Co..... \*7,000

SEPTEMBER 8.—By the *Minnehaha*=London:  
 Meyer & Brown..... \*139,500  
 Adolph Hirsch & Co..... \*4,500  
 General Rubber Co..... \*157,000  
 L. Littlejohn & Co..... \*11,200  
 Rubber & Guayule Agency..... \*11,200  
 Ed. Maurer ..... \*4,000 \*327,400

SEPTEMBER 9.—By the *Zeeland*=Antwerp:  
 Meyer & Brown..... \*100,000  
 Arnold & Zeiss..... \*90,000 \*190,000

SEPTEMBER 10.—By the *Olympic*=Southampton:  
 Arnold & Zeiss..... \*224,000  
 Meyer & Brown..... \*36,000  
 Robinson & Co..... \*3,500

C. T. Wilson..... \*8,500  
 Rubber Trading Co..... \*5,500  
 Ed. Maurer ..... \*3,500  
 Various ..... \*17,500 \*298,500

SEPTEMBER 11.—By the *Patricia*=Hamburg:  
 Arnold & Zeiss..... \*7,000  
 Ed. Maurer ..... \*7,500  
 Rubber & Guayule Agency..... \*18,500  
 Various ..... \*20,000 \*53,000

SEPTEMBER 11.—By the *Socstadyk*=Amsterdam:  
 Various ..... \*3,000

SEPTEMBER 13.—By the *Kafue*=Colombo:  
 Meyer & Brown..... \*94,000  
 Ed. Maurer ..... \*30,000  
 W. R. Grace & Co..... \*70,000  
 H. W. Peabody & Co..... \*3,500 \*197,500

SEPTEMBER 15.—By the *Amerika*=Hamburg:  
 Various ..... \*25,000

SEPTEMBER 15.—By the *Minnewaska*=London:  
 Meyer & Brown..... \*7,600  
 Rubber & Guayule Agency..... \*7,000  
 James T. Johnstone..... \*35,000  
 C. T. Wilson..... \*75,000  
 General Rubber Co..... \*350,000  
 Various ..... \*11,200 \*485,800

SEPTEMBER 15.—By the *St. Paul*=Southampton:  
 Meyer & Brown..... \*52,000  
 Arnold & Zeiss..... \*80,000  
 Rubber Trading Co..... \*3,500  
 W. Stiles ..... \*9,000  
 Ed. Maurer ..... \*6,000  
 Various ..... \*12,500 \*163,000

SEPTEMBER 16.—By the *Kroonland*=Antwerp:  
 Meyer & Brown..... \*17,000  
 Arnold & Zeiss..... \*11,200 \*28,200

SEPTEMBER 18.—By the *Majestic*=Southampton:  
 Meyer & Brown..... \*12,600  
 Arnold & Zeiss..... \*45,000  
 Robinson & Co..... \*11,200  
 New York Commercial Co..... \*35,000  
 Goodyear Tire & Rubber Co..... \*7,000 \*110,800

## BOSTON ARRIVALS.

IMPORTS IN AUGUST, 1913.

	Pounds.	Value.
Gutta-jelutong (Pontianak).....	2,346,144	\$108,150
Gutta-percha .....	4,674	694
India-rubber .....	14,494	6,727

## CUSTOM HOUSE STATISTICS.

DISTRICT OF NEW YORK—AUGUST, 1913.

Imports:	Pounds.	Value.
India-rubber .....	8,679,222	\$5,018,712
Balata .....	143,038	74,498
Guayule .....	141,728	32,082
Gutta-percha .....	1,689	1,290
Gutta-jelutong (Pontianak).....	2,098,215	96,983

Total .....	11,064,392	\$5,223,565
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Exports:	Pounds.	Value.
India-rubber .....	60,506	\$37,303
Balata .....	36,019	22,977
Guayule .....	6,702	2,818
Gutta-percha .....		
Reclaimed rubber .....	94,914	16,369
Gutta-jelutong (Pontianak).....		
Rubber scrap, imported.....	2,088,458	184,671
Rubber scrap, exported.....	201,595	35,907



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OCTOBER 1, 1913.

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## Antwerp.

## RUBBER STATISTICS FOR AUGUST.

DETAILS.	1913.	1912.	1911.	1910.	1909.
Stocks, July 30..Kilos	1,034,599	434,311	465,734	519,965	524,512
Arrivals in August—					
Congo sorts .....	225,238	262,846	299,703	338,797	147,313
Other sorts .....	3,968	4,900	49,906	34,574	49,199
Plantation sorts .....	171,555	167,303	46,532	49,875	32,748
Aggregating .....	1,435,360	869,360	861,875	943,211	753,772
Sales in August.....	841,891	393,788	339,474	406,651	508,921
Stocks, August 31....	593,469	475,572	522,401	536,560	244,851
Arrivals since Jan. 1—					
Congo sorts .....	2,040,981	1,976,790	2,140,816	2,139,120	2,325,028
Other sorts .....	104,540	95,728	318,649	244,781	660,121
Plantation sorts.....	1,318,015	837,342	420,749	374,452	177,535
Aggregating .....	3,463,536	2,909,860	2,880,214	2,758,353	3,162,684
Sales since Jan. 1....	3,381,127	3,108,826	2,946,025	2,763,303	3,513,568

## RUBBER ARRIVALS FROM THE CONGO.

AUGUST 27.—By the steamer *Anversville*:

Bunge & Co.....(Société Générale Africaine) Kilos	27,000
do .....	5,100
do .....	31,200
do .....	2,000
do .....	1,600
do .....	4,000
Société Coloniale Anversoise.....(H. C.)	385
do .....	6,500
do .....	12,600
Crédit Colonial & Commercial (Anc. L. & W. Van de Velde S. A.).....(Comfina)	21,300
do .....	6,400
Charles Dethier .....	10,300
(American Congo Cy)	128,385

## Plantation Rubber From the Far East.

## EXPORTS OF CEYLON-GROWN RUBBER.

(From January 1 to August 18, 1913. Compiled by the Ceylon Chamber of Commerce.)

	1912.	1913.
To Great Britain.....pounds	3,879,866	7,127,486
To United States.....	2,090,076	3,814,932
To Belgium .....	697,682	2,114,687
To Australia .....	116,159	321,249
To Germany .....	101,075	138,152
To Austria .....	27,577	27,946
To Japan .....	18,509	151,572
To Canada .....	16,065	.....
To Italy .....	5,885	36,507
To Holland .....	2,282	992
To France .....	1,915	.....
To India .....	100	881
To Straits Settlements.....	.....	20,064
To Norway and Sweden.....	39	.....
Total .....	6,957,230	13,754,468

(Same period 1911, 3,128,993; same 1910, 1,511,275.)

The export figures of rubber for 1913 given in the above table include the imports re-exported. (These amount to 1,268,353 lb.—970,353 lb. from the Straits and 297,818 lb. from India—Ed. C. O.) To arrive at the approximate quantity of Ceylon Rubber exported for 1913 to date, deduct the quantity of imports from the total exports. In previous years the exports of Ceylon Rubber only were given.

## TOTAL EXPORTS FROM MALAYA.

(From January 1 to dates named. Reported by Barlow & Co., Singapore. These figures include the production of the Federated Malay States, but not of Ceylon.)

	Singapore.	Penang.	Port Swet-	
To—	Aug. 13.	July 31.	Aug. 6.	Total.
Great Britain, pounds	11,073,394	7,849,600	13,826,506	32,749,500
Continent .....	133,133	56,400	1,758,619	1,948,152
Japan .....	549,854	.....	.....	549,854
Ceylon .....	17,981	144,800	807,421	970,202
United States .....	3,547,619	171,733	.....	3,719,352
Australia .....	49,200	.....	.....	49,200
Total .....	15,371,181	8,222,533	16,392,546	39,986,260
Same period, 1912...	7,989,565	4,798,834	10,766,596	23,554,995
Same period, 1911...	3,606,381	2,577,465	6,795,266	12,979,112
Same period, 1910...	1,968,181	1,270,571	4,706,124	7,944,876

